THE BUILDER

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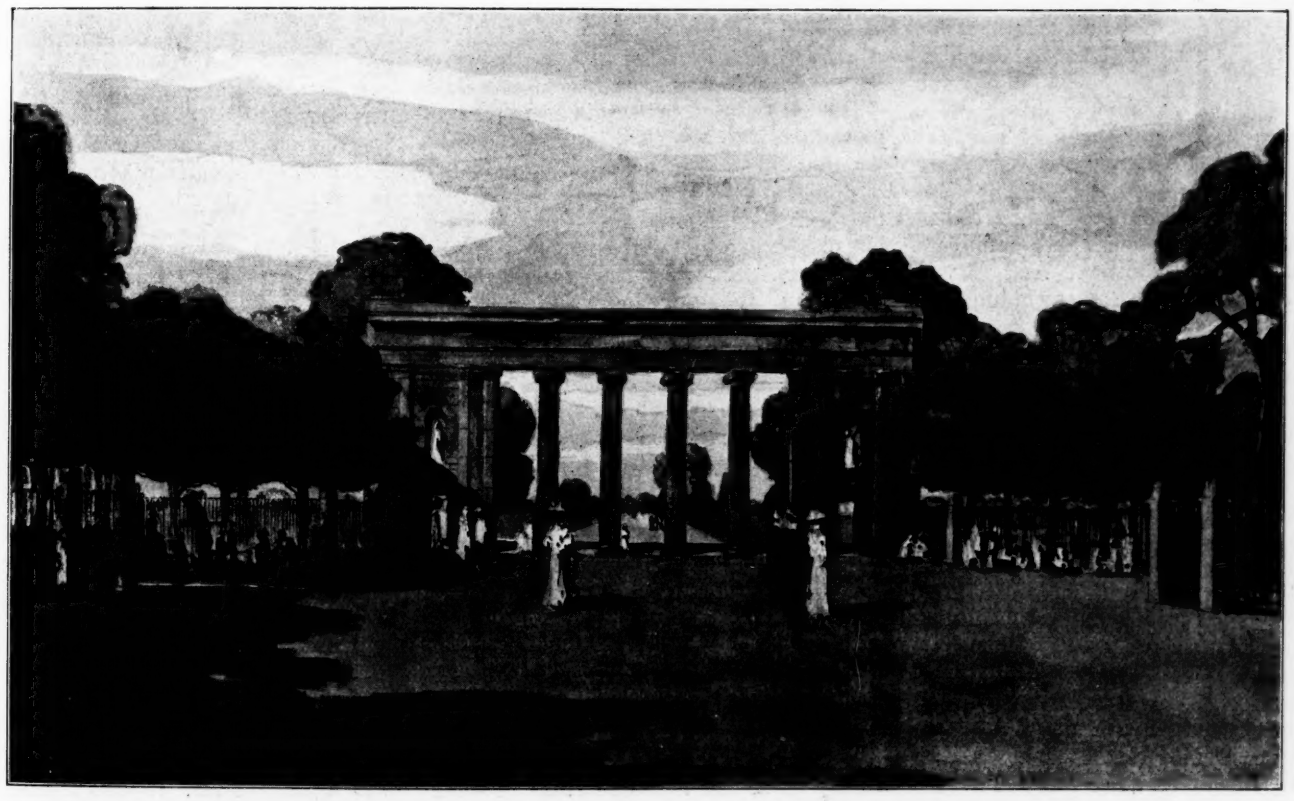
Victor Emmanuel Monument, Rome. Design for the "Altare della Patria," by Signor Arturo Dazzi.

"Oldcastle," Dallington, Sussex. Mr. Ernest Newton, A.R.A., Architect.

St. James's Church, Alperton. Mr. W. A. Pite, F.R.I.B.A., Architect.

House at Ashstead, Surrey. Mr. A. C. M. Edwards, A.R.I.B.A., Architect.



Manchester Old Town Hall: Scheme for Re-erection of part of the Façade at Platt Fields. (*See page* 716.)

Drawn by Mr. Edgar Wood, F.R.I.B.A.

THE ARCHITECT IN UTOPIA.

IT is sometimes said that the architect of to-day—who is innocent of so many unjust charges laid at his door—is too much wrapped up in the past, that his tastes and his studies alike tend to make him little more than a pedantic copyist of historic buildings.

For once one feels inclined to admit the impeachment, albeit with the usual reservations. So-called architectural "revivals" have a way of repeating themselves with tiresome monotony—the Neo-Classic, the Gothic, the Italian Renaissance, the Queen Anne, and so on—till one can almost prophesy the date when the next Gothic Revival is due. And woe-be-tide the man who refuses to recognise those waves of popular taste, for one must be as up-to-date with architectural modes as any slave of fashion with her fluctuating head-gear.

Meanwhile most of us emulate the ostrich in our outlook on the universe. We bury our heads in Gibbs's "Rules for Drawing" or Paley's "Gothic Mouldings" just as drowsy dons dull their perceptions in musty combination rooms while the world rattles on unheeded outside.

Aeroplanes and wireless messages are whirling round us, industrial upheavals shake the ground we stand upon. The Futurists shout and scream with pen and brush—and we take no interest in their doings.

Not very long ago, in an architectural contemporary, one of our younger writers broke the spell, like the Prince in the fable, and ingeniously discussed the position of our art from the convenient view-point of an aeroplane!

Surely it is time that we took stock of another eventuality which is becoming more feasible in the minds of some talented folk nowadays—that strange dim shadow of a universal Utopia forming the inspiration of so many interesting books during recent years.

Let us, then, play for a while at the children's eternal game of "Supposing."

There is no more gifted exponent of this game than Mr. H. G. Wells, and, though he may interest us in his tales of Mars and of the Moon, he is never so enthralling as when he takes a look ahead in this strange and wonderful world. In one of his most popular books he outlines his theory of the ideal Socialist

State, gathering up the many divergent threads of various thinkers before him.

Reading this "New Worlds for Old" the selfish thought came into the present writer's head that it was difficult to foresee how his own profession would be affected if a wave of some magician's wand suddenly landed Utopia in our midst. Would architecture gain or lose by the sudden transformation? Will it gain or lose if the ideal State is to come in the slow processes of many years?

On the one hand, we have the idealists, enthusiastic and confident, assuring us that Utopian England will become very nearly an Earthly Paradise, a long succession of spacious vistas and ordered cities; on the other, we find the cynics with their prophecies of deadly uniformity. The Right to Work—the opportunity for genius—is a plank in every idealist's platform, while his critics never fail to remind him that genius will be stifled and swamped in the awful monotony of an official-haunted existence.

Now in the actual progress of architecture at the present moment may be seen all the beginnings of a more scientific civilisation. In its widest aspect it becomes what we of to-day have learned to call town planning, and town planning has rapidly taken its place among the concrete facts of modern life. It is indeed a tacit recognition by all political parties of the advisability of the State undertaking a reform which has previously only been dabbled in by a few public-spirited landowners and employers of labour in this country. And this is neither more nor less than an admission of the Socialist doctrine in one direction.

Mention of building by-laws would bring one down from the clouds with a clatter and a rush, but even these barbarous efforts—savouring of bumbledom and the old vestry days—show that a need is felt for controlling the individual in the interests of society. In the same way might be mentioned a whole list of those increasing restrictions upon architecture which are in the main for its own good and which are nevertheless capable of considerable modification.

So that any development of control in the future could have no very alarming possibilities in store for us—rather a gentle tightening of the screw upon the extremist, the unqualified man, and the jerrybuilder, all of them probably the better for it.

The change would indeed be far more marked in the status or condition of the architect himself than in the abstract side of his craft. Architecture would probably progress rapidly in many ways with the elimination of the speculator and the State regulation of the greater part of building. An enormous demand would arise for small houses planned on the latest hygienic lines, tastefully designed, and situated with a view to convenience and fresh air. A new type of model flat would probably be evolved with facilities for communal cooking, while the public buildings in every centre of population would be as numerous as they were magnificent.

All of which is eminently satisfactory as a general proposition, and moreover is eminently reasonable. Call it Socialism if you like, call it civic pride, or democracy. There is no doubt that England of to-day in order to beautify her cities needs, above everything else, more of this keen corporate spirit to replace the trumpery selfishness of the suburban Londoner and the clutching rapaciousness of the alien speculator.

"The modern architect knows," writes Mr. Wells, "we might build ourselves perfectly clean, smokeless, magnificent cities to-day, as full of pure water as ancient Rome, as full of pure air as the Engadine, if private ownership did not block the way."

Yes, and the modern architect—Socialist though he be—knows that for the major part of his income he is dependent on that same system of private ownership!

Will he find his niche in Utopia as one of that vast army of officials whom most cities of Socialism forecast in their warnings, or will his independence be preserved? Is this new Earthly Paradise to be a bureaucracy or a happy hunting-ground for wayward genius? Who, in fact, will be the architects and how will their work be carried on?

Mr. Ramsay Macdonald, another well known authority, takes the extreme case of a poet and defends the position of this worthy person in the ideal State as being on the whole better than it is at present.

One confesses to a certain scepticism in regard to the financial position of the versifier of to-day, and would rather discuss a more ordinary being—the practising architect. He cannot display his plans in quite the same way as the poetaster declaims his verses to a gathering of immortals such as Mr. Macdonald describes in the Golden Age of the Edinburgh Select Society.

He will probably be reduced to a choice of two evils in place of his present condition of alternate boot-licking and futile attempts at competitions. He may become a public servant, or he may remain in a mild and emasculated way a private adventurer. Public service for architects is, of course, no new thing, and the conditions of this class are not likely to change very radically. Entrance will probably be entirely by competitive examination, and there will be less difference between the salary of the Superintending Architect and his juniors than now prevails, but the chief alteration will be in the immense increase of work which will come under the *ægis* of the municipality or the local authority. Dairies, bakeries, coal offices, and breweries will be designed by these new city architects of to-morrow, while railway-stations will also be a national affair. The new civil servant may have to work harder than his prototype of to-day, and he will probably be better educated both generally and technically for his work, but he will remain a comfortable, easy-going, perhaps enviable person with his pension and a jog-trot life.

Socialist writers, however, are generally in difficulties about the man who is not a State official. They all agree that ability will be recognised and honoured, every man getting his fair chance. Carried to its logical conclusion, this axiom implies a public competition—perhaps an international competition—for every scrap of building that is proposed. Then, of course, the best man wins, and what is more he goes on winning, so that we get no nearer to universal brotherhood. The second-best man remains second-best, and receives a small premium; while the man placed fifth gets nothing at all, and back we come to earth. It might be possible to penalise a man who wins too many competitions, making him "go back to the beginning," as in some old-fashioned parlour games of hazard.

Socialism is to destroy our modern competitive system, we are told, and yet in some mysterious way to ensure the triumph of genius and virtue, though the two seldom go hand-in-hand. It is to be the day of the virtuous small man, as Mr. Wells calls him, in a virtuous small house, and the millionaire "must come down to a simpler and in many material aspects less distinguished way of living."

Architecture in Utopia would undoubtedly advance enormously. With the ordered magnificence of Paris we should combine the charm of the Garden Suburbs already so rapidly springing up, and a modified form of that restraint which prevents London County Council tenants from keeping rabbits in their drawing-rooms would do us little harm.

But for the architect himself, with his curiously blended repertoire of talent and servility, an unknown future opens, and we agree with Mr. Wells and Mr. Macdonald that much work is necessary to render Socialism a practical proposition in matters of detail.

NOTES.

Manchester Old Town Hall.

THE efforts of Mr. Edgar Wood, the ex-President of the Manchester Society of Architects, and of numerous architects and other public-spirited citizens who have followed his initiative, have resulted in the decision of the City Council to rebuild the façade of the Old Town Hall in one of the public parks of the city. It seems incredible that a prosperous community like Manchester will not be at the public expense to retain so fine a specimen of its architecture as was the Old Town Hall, but that a condition of its rebuilding should be that half the cost should be privately contributed. It is, therefore, the greater honour to those of its citizens who answered Mr. Wood's appeal and have saved the façade in the face of the passivity of an indifferent public. It is a pity, however, that having decided upon the rebuilding of the façade, the Council has been hampered by an indifference no longer passive, and prevented from carrying out the scheme well. When, after much consideration, an excellent site had been decided upon—the spacious area of Platt Fields—and the dignified scheme which we illustrate on p. 715 prepared by Mr. Edgar Wood, there appeared numbers of angry residents in the district so jealous of their open spaces that the colonnade as an entrance gateway on a frontage hundreds of yards wide was described as blocking the view; and an ignorant opposition to what was really an ideal site, with arguments which would have applied equally well to Decimus Burton's arch or the Arc de Triomphe, was allowed to prevail. A much inferior site has been found in Heaton Park, near a new lake in process of construction. It

is now to be hoped that the opportunity thus presented of bringing the lake and the façade into one scheme of formal treatment will not be lost. Then Manchester will not only have preserved the best work of the finest period of her architecture, but she will have redeemed from utter dulness the very uninteresting sheet of water and some of the other incongruities of Heaton Park, and have made its surroundings more worthy of the stately mansion hard by.

The University of South Africa.

NOT the least potent evidence of plutocratic existence will be forthcoming to posterity from the endowments created by the millionaires of the present day. We have in mind the bequests of the late Lord Wandsworth and Mr. William Whiteley. The latest example of public-spirited forethought is provided by the legacy of a quarter of a million pounds sterling left by the late Sir Julius Wernher to the Union of South Africa to assist in building and endowing a University at Groot Schuur, near Cape Town, where, it will be remembered, Mr. Herbert Baker built a home for Mr. Cecil Rhodes, himself a wise contributor, notably in the case of Oriel College, Oxford, to the cause of scholarship. Sir Julius Wernher, who, a year or so ago, was awarded the Gold Medal of the Institution of Mining and Metallurgy for his services in connexion with technological education, also left over 100,000*l.* to the Imperial College of Science and Technology, South Kensington. Added to the Alfred Beit funds for the furtherance of education in South Africa, the Wernher bequest will enable the University to be established on a firm foundation, and we look forward to the possibility of a competition for the design of a building worthy of the future needs of the country. Sir Julius, we believe, materially assisted the project of founding an Art Gallery at Johannesburg, now realised in the building designed by Mr. Lutyens. He certainly gave to the new institution many works of art in co-operation with Mr. Otto Beit, Sir Lionel Phillips, Mr. Michaelis, and others; while in our own National Gallery he has filled a blank space by the presentation of Watteau's "La Gamme d'Amour." By such memorials the far-seeing financier who died last month helped to guarantee the progress and enlightenment of mankind, and in using his wealth so wisely he justified his accumulation.

The Advertisements Regulation Act.

IT is announced in the *Times* that the Local Government Committee of the London County Council are recommending the Council to frame a by-law prohibiting the exhibition of any advertisement within 40 yds. of 108 scheduled open spaces in such a way as to be visible from such open space, and in a second schedule thirty open spaces are specified from which it is proposed to protect the views from disfigurement by advertisement. We welcome this action on the part of the Committee, but it may well be asked, why has any step in this direction been so long deferred? Section 2 of the Advertisements Regulation Act, 1907, provides that a local authority in seeking by-laws under the Act shall provide for the exemption of any hoarding and similar structures in use for advertising purposes, and of any advertisements exhibited at the time of making the by-law for a period of not less than five years. The Act was passed in August, 1907, and we understand that there has never been any difficulty in framing by-laws with reference to specific places or spots, although there has been difficulty in protecting the scenery generally along our roadsides. Seeing the long period that must elapse before the by-laws where made can purge our scenery from existing disfigurements, it is difficult to see why nearly five years have been allowed to elapse before making by-laws which cannot be fully operative for a further period of five years. Mr. Richardson Evans has already stated that the Japanese have shown more enterprise than our own local authorities in dealing with this question.

PICTURE EXHIBITIONS.

AMONG modern art crazes there is none perhaps which can be justified upon more reasonable grounds than the craze for the Russian ballet. To artists, of all kinds, and more especially, we daresay, to those who practise architecture, it has been a source of pure delight. The dancing, perfect as it is after the traditional Italian manner, forms only part of an ensemble in which design, decoration, colour, and costume equally share. The pleasure to the architect is in the artist's realisation of appropriate and harmonious surroundings for the action and movement of the stage, which, in a certain degree, also provides an interesting problem, even in the most prosaic aspects of the more serious art of architecture. The names of the various dancers—Nijinksy, Karsavina, Pavlova—have become as familiar to London audiences as those of the actors who have won their Knightly spurs in British comedy; but the name of the designer of the scenery and costumes of such brilliant fantasies as Schéherazade and Cléopatre was practically unknown. It can remain so no longer. M. Léon Bakst is neither Futurist, Divisionist, Troglodyte (if we may include the latest exponent in new movements!), nor Russian dancer, but his drawings now on exhibition at the galleries of the Fine Art Society will secure attention for all that. He is, we presume, a Slav; his feeling for colour and form is Oriental—that is to say, it is decorative and sensuous without being decadent. His work may be compared in some of its aspects to the productions of both Beardsley and Mr. Gordon Craig; it possesses the decorative quality of the one and the romantic feeling of the other, while technically it is free from the mannerisms which are so often mistaken for style in art, but which are more frequently due to the artist's limitations as a colourist or draughtsman. M. Bakst's imaginative conceptions are not limited by any lack of technical training or facility in handling his materials; his artistic range is extensive, and he is a master in the interpretation of the decorative forms of Eastern and ancient art. A good deal will no doubt be heard of him within the next few weeks.

The name of Alphonse Legros is probably better known than his work; it is largely connected with art teaching. Although a Frenchman, the greater part of his life was spent in England. He was eminently successful, we understand, as a teacher; the quality of his pictures suggests that his professorial influence must have been also eminently individual. Legros's art was not affected by his residence in England; its essence and spirit were always French. He was somewhat of a mystic, keenly in sympathy for the most part with the men of the Barbizon school. The memorial exhibition of the work of Alfred Stevens recently held at the Tate Gallery has now been followed by a similar exhibition devoted to the work of the later artist. It would be impossible perhaps to get together a more adequately representative collection of his work than the Director of the Tate Gallery has secured on the present occasion. Legros's practice of oil painting was, we should infer, somewhat intermittent. The sixty examples on view cover dates as distant as 1853 and as recent as 1905; a certain uniformity of idea runs through the whole series, just as a consistent outlook on life and nature is expressed in all his art, while his execution, always intensely sincere, shows a variety of influences. Legros as a painter, as an etcher, as a sculptor is sombre; his sympathies in regard to various aspects of life leave him, even in his landscapes, a little sad. But he is never sentimental; his feeling for the poor, for the peasant, for the children of toil was too profound to contain any mawkish element. Probably his period of highest achievement in oil painting was between the years 1865 and 1890. "Le Baptême," which belongs to 1869, the "St. Clement of Alexandria" (1870), and "The Pilgrimage" (1871) must, at any rate, be counted among his best work. His etchings are more generally familiar than his oil paintings, while his portraits and drawings of heads remain masterpieces in their kind, both in regard to execution and the interpretation of the character of his subjects.

The International Society provides a large and representative exhibition of contemporary British landscape in the second instalment of their annual show at the Grafton Galleries. It is a little curious, however, that a small water-colour by the first President of the Society, Mr. Whistler, should be relegated to a place below the line, while numerous landscapes by Mr. Walter Greaves are given places of distinction—to which, be it said, their merit certainly entitles them. Past contemporary masters, if we can use the expression, are represented by Watts, Cecil Lawson, and Buxton Knight, while among the modern men we find Mr. Hughes Stanton, Mr. Rothenstein, Mr. Lavery, and many others well represented. Mr. Cayley Robinson's "Dawn" shows very distinctly the influence of Puvis de Chavannes. We were glad to notice two pencil drawings by Professor Selwyn Image, whose pencil and water-colour, or tinted, drawings are seen too rarely at general exhibitions. There are also some landscapes by Legros which go to supplement the collection at Millbank. The exhibition contains much brilliant work, but, as a whole, it is disappointing. Probably this large array of landscapes wanted some relief, or else the various works were conceived, with some rare exceptions, without the decorative quality which makes landscape in a promiscuous collection possible. The repetition of pretty much the same sort of effect, however various the means, makes for a restless, unsatisfactory kind of dulness if the visitor cannot find other qualities for admiration than the merely technical in his voyage of discovery.

APPOINTMENTS VACANT.

A meeting will be held on Thursday, July 11, for the election of a Diocesan Surveyor or Surveyors for the Diocese of London. Particulars may be obtained from Mr. F. H. Lee, No. 1, The Sanctuary, Westminster, S.W.

The London County Council invites applications by June 22 for the following positions:—Teacher of Architectural Drawing for one evening a week at Camberwell. Applicants must be skilled draughtsmen and be architects in practice. Fee, 12s. 6d. an attendance. Teacher of Architectural Design and History of Architecture on two evenings a week at Putney. Fee, 15s. an attendance. Candidates must have had teaching experience and be architects in practice

TEMPORARY EXHIBITION BUILDINGS.

YEAR by year more consideration is being given to the design and construction of temporary exhibition buildings, and the standard is undoubtedly being raised. In these days of rush and bustle the thinking public are learning more and more to appreciate the old-world feeling of repose which permeates any studied representation of mediæval buildings, streets, and market-places, even though they be carried out in nothing more massive than slabs of fibrous plaster. And this harking back to the olden days in exhibition grounds is not confined to England. We well remember "Old Düsseldorf," at the Brussels Exhibition of 1910, to say nothing of earlier attempts on the Continent, and great expectations are aroused by the announcement that at the International Exhibition of the Building Trades to be opened at Leipzig in May, 1913, numerous buildings representing the city at the time of the War of Liberation will be erected. The old gates and fortresses, and the old Plassenburg, as well as many other streets and courts, will be seen once more. Provided these "structures" are entrusted to men of scholarly knowledge and artistic feeling, the result should be well worth seeing, and a visit to Leipzig should be instructive, seeing that the exhibition will apparently afford a wide range of interest to all concerned with the constructive and decorative arts.

At Earl's Court, at the present time, may be seen in "Shakespeare's England" what can be done in the way of reproducing old architecture in plaster, aided by a judicious use of colour. Some of the "Tudor buildings" there set up are quite excellent, and, as far as we know, ahead of anything that has been previously attempted in this country as regards thoughtfulness of detail.

In the matter of scale only do they disappoint, and to one who is familiar with the originals, be they in the streets of some busy town or hidden away in the wilds of the country, it is at first sight somewhat disconcerting to find that the scale has been reduced, doubtless owing to the exigencies of exhibition building. Nevertheless, there are Tudor houses in "Shakespeare's England" which even the expert can look upon with pleasure, and which cannot fail to enlighten the public mind and to be something of a revelation to those who have not the opportunity to see the originals for themselves.

We hope to illustrate some of these ingenious reproductions of old work in a subsequent issue.

THE ARCHITECTURAL ASSOCIATION:

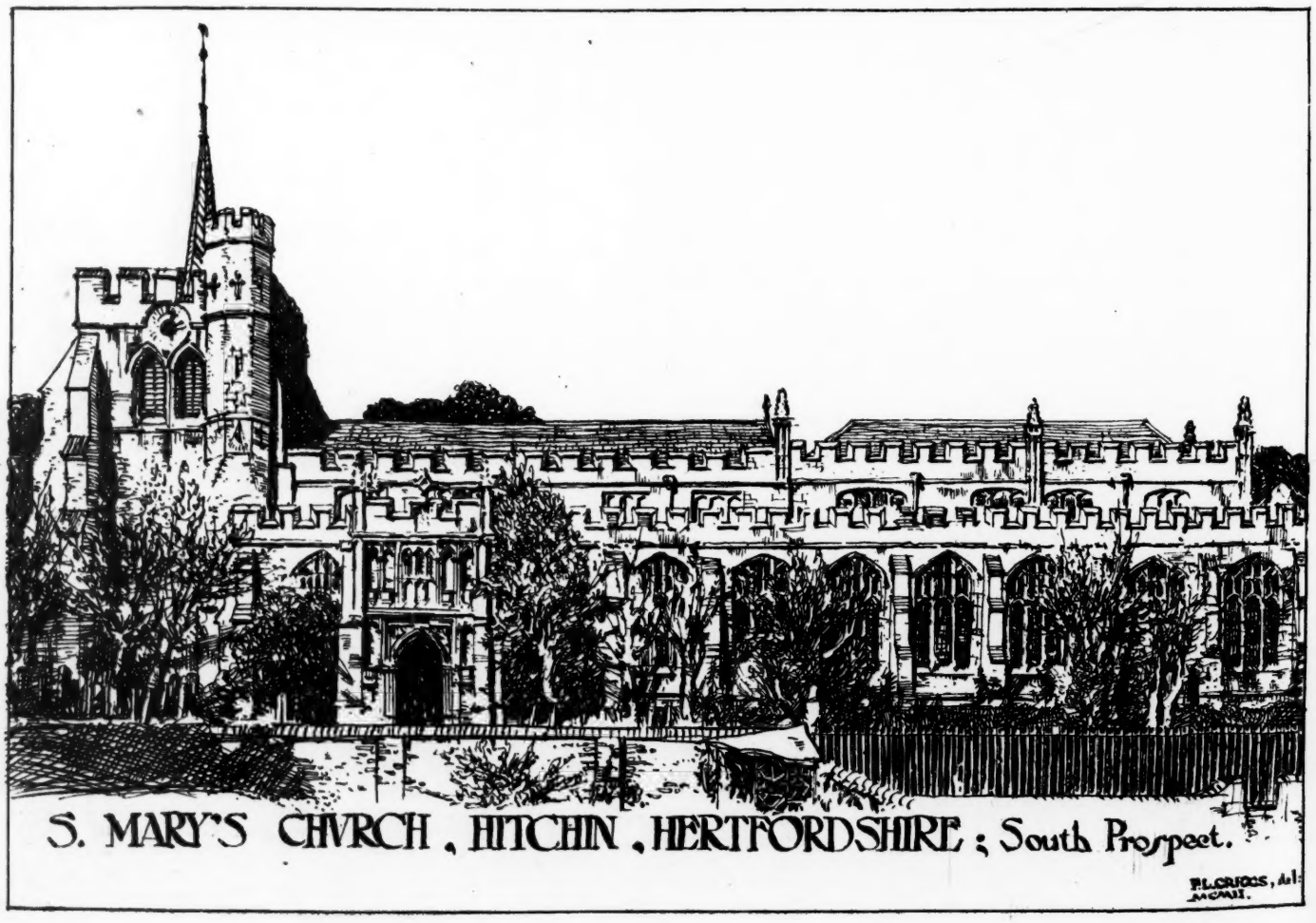
SECOND SUMMER VISIT.

A LARGE number of members left King's Cross on the 15th inst. for the all-day visit to Hitchin and neighbourhood, under the guidance of Messrs. Walter Millard and Geoffry Lucas. On the way from the station to the town the Girls' Grammar School, built in 1908 by Mr. Edward Burgess, of Leicester, was seen in passing. This is a fine block which masses well from the entrance lodge, but the daring change in storiation on either side of the central feature of what at first glance seems a symmetrical front is startling. The detail is good and quiet and the materials pleasing. Descending "Windmill Hill," whence a fine panoramic view of this typical country town may be had, a visit was paid to St. Mary's Church, where Mr. Millard, with the aid of careful plans prepared from time to time by himself and Mr. Lucas, explained the growth of the existing fabric. It appears to be almost entirely of XVth-century date, but a careful analysis assisted by excavation at several points during the course of recent reparations convinces Mr. Millard that the nave and tower occupy the position of a church of the mid-XIIth century, and that at the angles of the nave walls and in the base of the tower, portions of this structure remain. The tower arch and its strengthened abutments are of the XIIIth century; the nave arcade and aisle walls follow next in date, apparently the early XIVth century, the angles of the original east end being perhaps of similar age, though an additional bay was projected eastward, without moving the altar, in the XVth century, when also the chancel arcade was rebuilt, practically all the windows in the church were remodelled, and the fine north and south porches built, giving an appearance of XVth-century character to the whole building. The broad low proportions of the tower, with its typically Hertfordshire leaded spirelet, give a strong note of character. The nave was restored by Sir Gilbert Scott, and the chancel (rather destructively) by Sir Arthur Blomfield, who built a false inner roof and crammed the altar back against the east wall.

A short time remained for a walk round the streets of the old town; this is not the place for an historical description—interested readers may discover this (and admire some fine drawings by Mr. F. L. Griggs) in "The Royal Manor of Hitchin and its Lords Harold and the Balliols." A flying visit was paid to the new Town Hall—an early work of Mr. Lucas, in conjunction with the late E. W. Mountford.

After luncheon at the "Sun," a drive of about three miles brought the party to Poynder's End, a good-sized house by Mr. Lucas. Perched on the swelling crest of a considerable hill overlooking a wide stretch of country, the prospect thus commanded has had some influence on the planning. The house is quite informal in design, a freely developed picturesqueness and interesting detail giving it its architectural qualities. The principal rooms face south-east, on which front overlooking the garden are three spacious two-storied bays (unevenly spaced) and a shady loggia. The living hall at the north end is a charming room, white panelled and with broad open fireplace. Its massive chimney and an additional lead-covered bay at the north-west angle group well on the end overlooking the hillside. Future extension at this end was contemplated in planning. A very massive staircase is a striking feature of the interior.

Near at hand is Temple Dinsley, where, on the nucleus of a pleasant little Georgian house Mr. E. L. Lutyens has grafted a mansion quite in his best manner. The attractive name of course suggests the previous existence of a Preceptory of Knights Templars, but of this no trace remained. Mr. H. W. Tompkins F.R.Hist.S., writing in 1902, described the house as "just such a homestead as an Englishman might be expected to love." It is that still, though more than three times the size of the house he saw, but it is something more—it is a work of which all Englishmen might reasonably be proud. Mr. Lutyens' absolute mastery of material is nowhere better seen, nor is the plan lacking. Simplifying and remodelling the old house, which remains intact as a centre block to the new, Mr. Lutyens has projected a long wing one room thick on either side, making an H plan with the old house slightly lengthened each way as the cross-piece



S. MARY'S CHURCH, HITCHIN, HERTFORDSHIRE: South Prospect.

F.L.GRIGGS, del. MCMII.

the projections partly enclosing a forecourt (completed by walls and railings) on the south or entrance front, and a terrace overlooking gardens on the north. The principal new rooms are in the west wing, and their articulation to the old plan is at once simple and ingenious. A wide corridor from the staircase hall leads to an octagonal garden hall in the centre of the new west front, which is axial with the old kitchen-garden. Right and left of this open the drawing-room and smoke-room, the former with white-painted panelled walls and flush cabinets between the windows and the latter more boldly panelled in unpainted pine, limed and dull polished. The other new wing and the buildings to the eastward are chiefly occupied by the kitchen and servants' quarters, and in this direction a further extension just completed gives a nursery wing above an open arcaded basement. On the upper floor of the new wings are several bedrooms; a most beautiful bed of Mr. Lutyens' design fitly occupies one of them. After an exhaustive inspection of the interior an all too brief time remained for the beauties of the garden and exterior. The breadth and restraint which have been imparted to the new fronts and the slender means by which the whole effect is obtained make one marvel. Taking as units the suggestions offered by a rather unusual angle treatment of the old house, and its well-proportioned sash windows, Mr. Lutyens by mere disposition of masses and by the aid of some fine chimneys achieves his result—a thing as perfect in its way as can be imagined. By the kindness of Mr. Fenwick, members were allowed the free run of the house, and Mr. Thomas, with Messrs. Butt and Barnard, had brought drawings which, with their explanations, increased the interest of the visit. A large new block of farm buildings near by was hastily inspected before the return to Hitchin, where, after a walk round Mr. Phillips's antique furniture galleries at the Manor House, Bancroft, members returned to town with a consciousness of time well spent.

MESSRS. WHITELEY'S NEW PREMISES.—II.

(*Continued from page* 701.)

Fire-Resisting Construction.

Protection of Steelwork.—The exterior stanchions are encased in approved fire-resisting materials to the minimum thickness of 4 in., in accordance with the requirements of the London County Council, the nature of the materials employed varying with the position of the members to be protected. Interior stanchions are covered to the same thickness, as suggested by the County Council in view of the large areas of the various shops.

The girders are embedded in concrete, monolithic with that in the hollow block and reinforced concrete flooring.

Flooring and Terrace Roof.—All the suspended floors in the building, as well as the terrace-roof and the protection of the steelwork generally, were executed by the Fram Steel and Fireproof Construction Company, Ltd., of Westminster.

The floors represent a combination of hollow blocks and reinforced concrete. The blocks are of clay, carefully moulded and burnt, and have ribbed surfaces to furnish a key for the surrounding concrete and for plastering on the soffit. The blocks are situated in the lower part of the floor to conduce to lightness of construction, and to reduce the conduction of sound. Tensile stress is taken by steel rods embedded in the concrete or mortar joints between the blocks, and compressive stress is taken by the concrete above the hollow blocks, suitable provision being made in the form of stirrups for web stresses.

The concrete in the joints of the blocks is of superior quality, which is also employed in the compression area to the requisite depth for resisting the stress developed. In places where the floor spans are small the uniform thickness of 12 in. adopted is made up by a filling of low-grade breeze concrete deposited above the better class material required for withstanding compression.

The hollow blocks are arranged in different ways according to circumstances, some being placed side by side, and others in rows consisting of blocks laid flat alternating with blocks on end.

In some of the largest panels the joints are reinforced in two directions as an additional assurance of strength and safety.

The floor spans are of considerable extent, many of them measuring nearly 32 ft. square, and the largest 45 ft. by 30 ft.

The suspended floors and flat roof, which is constructed in accordance with the same method, represent an area of more than 5 acres, and were constructed in less than six months.

In order to achieve this result it was necessary for the contractors to work day and night for a period of about two months, one serious difficulty which had to be surmounted having been the delivery of materials with almost clocklike regularity, as in consequence of limited storage facilities it was impossible to keep supplies on the site in quantities providing for more than a few hours' work.

During the period of greatest pressure upwards of 2,000 sq. yds. of flooring were completed each week, involving the use of 25,000 hollow blocks and seven barge loads of sand and ballast, besides large quantities of cement and steel.

Division Walls and Fire Doors.—Owing to the fact that the cubical contents of the seven departments amount in each case to more than 700,000 cub. ft., it was necessary for the division walls to be 14 in. thick to satisfy the County Council, the steelwork being encased to the thickness of 4 in., as previously stated.

As openings through the division walls were absolutely necessary for the convenience of business, although contrary to ideal principles of fire-resisting construction, special care was taken by the architects to provide effective means of preventing the spread of fire from department to department in case of need.

As a first precaution, the steel framed bronze doors were fitted with Luxfer fire-resisting glazing, consisting of small panes of glass in copper framing, the same system of glazing having been adopted for the fanlights. Although not capable of prolonged resistance, this glazing would certainly withstand considerable heat for a reasonable time.

A further safeguard adopted for isolation purposes was the employment of fire doors and rolling shutters on both sides of every opening.

In the case of the smaller openings, tin-clad doors supplied by Messrs. Mather & Platt, Ltd., were fitted on each side, with an ample air space between them, the doors having spring hinges arranged so as to shut automatically in the event of fire breaking out.

The wider openings are protected by rolling doors or shutters supplied by the Wilson Rolling Shutter Company. This type of fire door construction was invented by Mr. J. G. Wilson, of New York, and provides an air lobby between the door or shutter on each face of the wall. The opening in the wall is always wider than the doorway and extends from the floor to the ceiling. A pair of light wing walls are built out from the opposite faces of the main partition wall as shown by the details below. The wing walls span the entire opening and the parts above the door openings are carried on lintels.

The roof of the lobby is of fire-resisting material, with an outlet at one end for the escape of excessive heat and smoke, and acting as a ventilator under normal conditions.

The rolling doors travel in metal guides at the sides of the opening, and are fitted so that they cannot be directly attacked by fire. The form of the guides ensures the close contact of the doors with the fire-resisting surface of the wall, and immediately above them are the metal housings for the support of the horizontal winding rollers.

The shafts on which the rolling doors are hung are hollow, and contain counterbalancing springs which hold the doors in the normal position, and when the springs are thrown out of action the doors close automatically. The springs are controlled by a flexible metal connexion having a fusible link, as shown in the plan. In case of fire, the link fuses, causing a tumbler to fall and thereby to throw out the control of the corresponding spring, with the result that the door closes by its own weight.

The doors can be mechanically operated by means of a key shaft extending through both walls and fitted with gearing as represented in the section.

Fire-Resisting Glazing.—Although the shop fronts are of plate-glass, the windows are enclosed by fire-resisting casings with Luxfer fire-resisting glazing, so that if a fire were to break out in any window enclosure the flames would not readily extend into the shop, as happened in the case of the Clapham Junction fire.

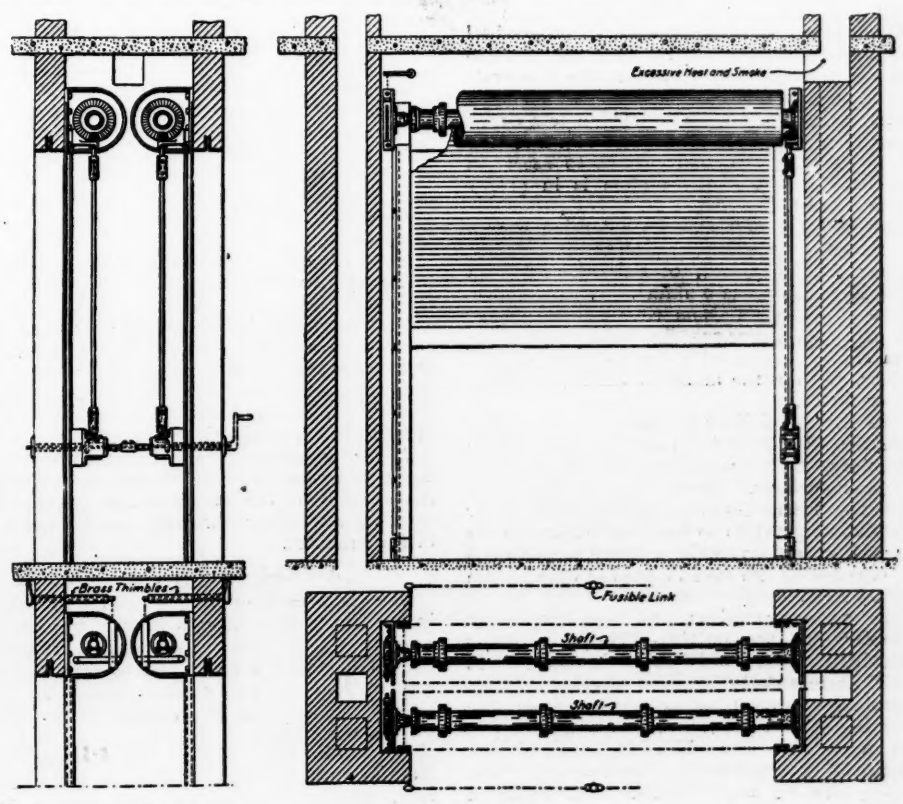
The Luxfer system of glazing has been applied also to all the windows throughout the establishment.

The domes comprise an inner and an outer shell, both glazed with armoured glass by the Challenge Glazing Company, Ltd., by whom also the steel framework of the domes was constructed. The domes comprise some 40,000 sq. ft. of glazing.

Some armoured glass roof lights have been fitted by Messrs. J. A. King & Co., Ltd., and the work executed by the Luxfer Company includes patent lantern lights, skylights, pavement lights, and lights in the fire-escape balconies.

Fire-Escape Stairs.

Apart from the safeguards provided by fire-resisting construction and fire-protection appliances, the new building is fitted with exterior balconies and escape stairs. These are accessible from every floor, and should afford ample means of escape in the event of an outbreak of fire.



Wilson Rolling Shutters.

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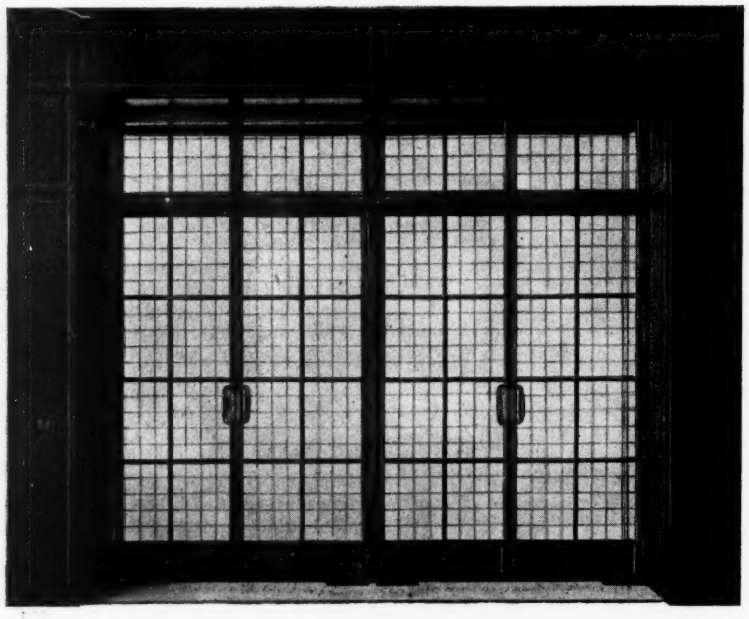


Doors between the Departments at Messrs. Whiteley's New Premises.
(Showing Luxfer Glazing.)

The balconies and stairs were supplied by the St. Pancras Ironwork Company, Ltd., the treads and risers being of iron, perforated for the passage of light to adjacent windows, with the exception of those in situations where light is not a matter of importance or where non-slippery treads are required. The construction is in accordance with the regulations of the London County Council throughout.

Fire Protection Appliances.

Electro-Pneumatic Fire Alarms.—For the detection and notification of fire in any department of the building a complete system of the fire alarms has been installed by the Acro Fire Alarm, Ltd., of London.

The installation comprises a system of small diameter copper tubing run in circuits along the ceilings all over the premises and connected with an indicator board on the ground floor.

In the event of fire the increased temperature of the atmosphere causes the air in the tubes to expand, and the pressure thereby created acts upon a sensitive diaphragm on the indicator board, making an electrical contact which denotes by an indicator the exact position of the outbreak, sets alarm bells ringing, and gives warning at the offices of Messrs. Whiteley in Queen Victoria-street.

The alarm system is applied to the forty sections into which the building is divided, and includes about eight miles of copper tubing.

The apparatus is arranged so that gradual increases of temperature such as may be due to warm weather shall not be capable of operating the signals, and provision is also made to obviate false alarms due to sudden temporary rises of temperature. It also includes a testing device enabling the management to ascertain periodically whether the system is in proper working order.

Sprinkler Installation.—An extensive system of Grinnell sprinklers, supplied by Messrs. Mather & Platt, Ltd., of Salford, has been fitted throughout the building.

The installation comprises about 3,500 automatic sprinklers supplied with water either from storage tanks, with the capacity of 6,660 gallons, or from the mains of the Metropolitan Water Board.

The horizontal lines of pipes are suspended from the ceilings in the basement and on the top story, and elsewhere are laid beneath the floor surfaces. These pipes are connected with the rising mains supplied with water at sufficient pressure to keep the entire system charged, except in sections where the Grinnell dry pipe system has been adopted as a precaution against frost.

The sprinkler valves are kept closed by a solder link, the melting-point of which is such that the metal will fuse at the temperature of 155 degrees Fahr.

Sprinkler branch pipes project from the inner face of the two domes at frequent intervals, and in addition there is a ring main around the outside of each dome, so that the whole of the glazing can be kept flooded with water in case of fire, the same arrangement being available for cleaning purposes. The ring mains are supplied with water from 2½ in. diameter service pipes.

Hydrant System.—In addition to the sprinkler installation the building is protected by a hydrant system, comprising rising mains of large diameter, with valves and hose-pipes ready for use for every floor. There is a rising main close to each of the staircases, and the hydrants can be supplied with water either from the mains of the Metropolitan Water Board or from the steam fire pump in the engine-house. The system was installed by Messrs. Mather & Platt, Ltd., of Salford.

Lightning Protection System.—The lightning conductors on the new building were fitted by Messrs. Richard Anderson & Co., of Leadenhall-street, E.C., as briefly described below.

To the base of the steel flag-staff surmounting the tower over the main entrance a conductor of 1¼ in. by ⅛ in. copper cable was connected by means of bolts and solder. From the flag-staff the conductor was led to the back of the building and thence down the steel supports of stairways to earth, terminating with a 3-ft. square copper plate sunk to depth sufficient to bring it into contact with moist earth, and embedded in wood charcoal.

Two copper four-point terminals were attached to each end of the exterior lift building at the back, and connected up to the above-mentioned conductor, similar connexions being made between the main conductor and the rotunda dome and railings.

At the top of the timber flag-staff on the corner turret a ball pointed air terminal was fixed with a conductor of 1¼ in. by ⅛ in. copper cable, carried along the parapet wall to the rear of the building, passing to earth down the steelwork of stairways, and terminating with a copper plate bedded down in the same manner as that for the conductor from the main flag-staff.

In each case the steelwork of the stairways was properly connected up to the copper conductor.

Four-point air terminals were fixed at the ends of the exterior lift building and on the ventilation head, and connected up to the conductor from the turret flag-staff, the steelwork of the octagonal dome and railings being also connected to the same conductor.

The dimensions of the main conductors were governed by the long horizontal runs on the roof, necessitated by the circumstance that the only place available for earthing was at the rear of the premises.

Lifts and Parcels Conveyors.

The new system of shopping prevailing in modern establishments of the type represented by the premises of Messrs. Whiteley entails the need for mechanical aids to locomotion such as will enable visitors to gain access to the upper floors without the labour of climbing stairways.

With this object in view ten passenger lifts have been installed in addition to eight goods lifts, two kitchen service lifts, and a very complete plant for the mechanical handling of goods and parcels, all these appliances being operated by electricity supplied from the generating station on the premises.

Lifts.—All the lifts were supplied by Messrs. R. Waygood & Co., Ltd., of London, and are of their most recent patterns

The ten passenger lifts are constructed to travel at the speed of 250 ft. per minute with a load of 20 cwt.

The cars are built of ornamental ironwork specially designed by the architects to harmonise with the interior fittings of the building, and the sides are closed with glazed panels.

In order to obviate crowding the cars are of spacious dimensions, each measuring 6 ft. by 5 ft. in plan. The guide rails for the cars and the counterbalance weights are of heavy section round steel bars, turned in the lathe to ensure smooth working, the cars and weights being fitted with adjustable gunmetal guides to work against the rails.

Beneath each car is attached a safety apparatus, to which the cables are fixed, this apparatus working in connexion with a patent slack cable gear on the crown bar above the car.

The appliances come into action automatically if any rope breaks or stretches unduly, or if any obstruction is encountered either by the car or by the counterbalance weight, the effect in any of these occurrences being to cut off from the machinery, and at the same time to prevent the descent of the car.

Special speed governors are also provided for operating the safety gear in case any lift should descend at excessive speed owing to any cause.

Mechanical and electrical locking gear is fitted to the gates at all landings to prevent the lifts from being started unless the doors are shut and to prevent the doors from being opened unless the cars are opposite the landing.

Each car is operated by means of a self-centring detachable handle, so designed that in the event of the attendant omitting to turn it to the "off" position when arriving at the top or bottom of the travel all current is automatically cut off, and in case the attendant should relax his hold of the handle the latter would automatically spring to the "off" position and thereby stop the car.

The winding gears are constructed with steel worms cut from the solid and worm-wheels with phosphor-bronze rims and teeth to ensure smooth and steady running, and the gears are fitted with double ball thrust bearings.

Each machine includes a winding-drum with two steel wire cables for the car and separate cables for the counterbalance weight, and has an automatic electric brake arranged so as to come into action automatically in case current should fail from any cause. The electric motors for operating the lift gears are of 17-brake-horse-power with the overload capacity of 50 per cent.

The eight goods lifts range in capacity from 10 to 20 cwt., and are constructed for operation at speeds of from 125 to 250 ft. per minute, the cages being from 6 ft. by 4 ft. to 8 ft. by 6 ft. 6 in. in plan.

These lifts have steel guides and guide rails and safety apparatus similar to those adopted for the passenger lifts, and are operated by handles in the same way. The gears are of different design, but the safety appliances are of the same type as for the passenger lifts. The cages are of steel with plain wood panels.

Inclined Parcels Hoist.—Between the basement and ground floor is a Reno moving stairway for elevating trolleys of parcels to the despatching-room at ground level. This stairway, which was fitted by Messrs. Waygood & Co., comprises an endless chain belt having teeth for engaging projections on the trolleys, and thus enabling the latter to retain their position on the inclined travelling-belt.

Parcels Conveyors.—To provide for the expeditious transport of parcels from the various departments of the new premises to the packing-room in the basement an ingenious system of conveying plant has been installed by Messrs. A. Sauvée & Co., of 60, Park-street, S.E. The installation includes five spiral shoots connecting the various upper floors with the basement. Parcels descending a spiral shoot are received on an electrically-driven conveyor or band, and delivered therefrom into a second shoot, whence they are deposited upon one of the two rotating sorting-tables for removal to the delivery vans.

There are about 350 ft. of conveyor belting, travelling at the rate of 3 ft. per second.

Boiler Plant and Generating Station.

The power plant is accommodated in part of the basement in the old portion of the Queen's-road building.

The boiler-house contains four Galloway boilers, each 30 ft. long by 8 ft. in diameter, fitted with Meldrum mechanical stokers, and two Lancashire boilers by Messrs. Adamson fitted with stokers of the Meldrum type.

The stokers are arranged for the use of low-priced fuel, the necessary draught being furnished by a chimneyshaft 160 ft. high, with the interior diameter of 8 ft. 6 in.

Steam is generated at the pressure of 120 lb. per square inch, and is passed through Galloway superheaters situated behind the boilers, the temperature being therein raised from 350 deg. Fahr. to 450 deg. Fahr.

The boiler feed-pumps are driven by steam, and motive power for the mechanical stokers is provided by Siemens type electric motors.

The plant for generating electricity has been enlarged to cope with the requirements of the new building, and now includes seven generating sets with the collective output of some 800 kilowatts.

Six of the sets have Willans & Robinson engines direct coupled to Lahmeyer dynamos, and the other set consists of a Belliss engine with Siemens dynamo. Current is generated at the pressure of 200 volts.

The main switch-board is at one end of the generating station, in an open position so as to be readily accessible on both sides.

Electric Lighting.

Current for the lighting of the new premises is supplied at the pressure of 200 volts from the generating station situated in the old part of the Queen's-road building, the supply mains being brought thence to two main switch-boards in the basement of the recently-completed extension.

From the main boards seven pairs of sub-main cables are taken in steel conduits to feed the sub-main distribution-boards, one in the basement of each of the seven sections into which the new building is divided.

From the sub-main distribution-boards rising cables are taken to each floor as feeders for the iron-cased distribution switch-boards in the numerous departments.

The wiring for arc lamps and incandescent lamps proceeds from the distribution switch-boards, and, like all the cables, is protected by steel tubular conduits.

A noteworthy feature of the conduit system adopted is that it was specially arranged in such manner as to permit all the cables and wires to be drawn in after completion of the building. If necessary, any circuit, or all the circuits, could be drawn out with perfect ease, and without causing disturbance of the conduits, floors, or decorative finish of the building.

This ingenious system is a speciality of the electric-lighting contractors, who were one of the first firms to demonstrate its practicability and to adopt it exclusively in installations carried out by them.

As customary in the best modern practice, all wires throughout the building are in continuous lengths from point to point, thus obviating joints of any description.

The entire installation was executed by Messrs. H. J. Cash & Co., Ltd., of Westminster, and some notion of its extent may be obtained from the statement that the lighting system includes some twenty-four miles of copper conductor, more than a thousand arc lamps, and more than twelve thousand incandescent lamps.

The new shops are illuminated partly by arc lamps of the Brokie-Pell single-enclosed pattern and partly by incandescent metallic filament lamps, the latter being distributed in various places for the more perfect sub-division and uniform distribution of light.

In situations where the headroom is insufficient for the employment of arc lamps special 14-in. holophane pendants have been fitted. There are eighty-two of these, each containing a 200 candle-power 200-volt incandescent metallic filament lamp. These lamps and fittings were supplied by Messrs. Siemens Brothers Dynamo Works, Ltd., of London. The holophane bowl and shade is carried by a neat bronze ring with suspension chains in the same metal.

Holophane pendants of the pattern described are used exclusively in the jewellery department, and incandescent lamps are employed for the illumination of the restaurant and tearoom. Some tasteful examples of special electric light fittings were supplied by Messrs. J. W. Singer & Sons, Ltd.

The two large domes are illuminated by metallic filament lamps in the space between the inner and outer glazing.

The problem of lighting the shop windows was considerably simplified both by the architectural design and by the system of window-dressing which is favoured at the present time by the proprietors of large stores.

The practice in window-dressing formerly thought necessary involved the maximum utilisation of show space with the object of enabling prospective buyers to see a representative selection of the goods for sale inside.

An arrangement of the kind entails outside lamps combined with interior lighting, usually afforded by lamps suspended by flexible conductors. There are objections to this method, one in particular being the source of danger constituted by lamps hanging from long pieces of flexible cord.

The policy largely adopted by large drapery firms to-day is to arrange their shop windows in the most attractive manner possible and, abandoning the idea of making the outer display representative of all classes of goods on sale, to welcome the free inspection of their showrooms without permitting the least importunity on the part of salesmen and saleswomen.

The new premises of Messrs. Whiteley have been designed in general accordance with this wise policy, the result so far as concerns window lighting being that the old-fashioned arrangement of reflecting lanterns and dazzling inside lamps has given place to reflected illumination, ensuring the uniform distribution of light and a far more cheerful effect than that obtainable by previously adopted methods.

Each shop window is lined along the front inside the glass with rows of incandescent lamps concealed by metal strip reflectors, the lamps being attached in pairs by twin holders.

The reflectors are suspended by adjustable chains at the height of about 10 ft. above pavement level, and the top of each reflector is enamelled white. A separate wiring-box is provided for each reflector unit, the lamps having the illuminating power of fifty candles, and, being made for the pressure of 100 volts, they are arranged two in series on the 200-volt circuits. The lamps employed for window lighting represent the total of 25,000 candle-power.

Heating and Cooking Apparatus.

The heating and ventilation of the basement was carried out by Messrs. Comyn Ching & Co., Ltd., the method adopted being to blow air into the building at the rate of two million cubic feet per hour through two large electrically-driven fans of the blower type, and to extract vitiated air by means of exhaust type fans.

Fresh air is drawn in through an intake at some height above ground level, and in cold weather passed over steam-heated coils, raising its temperature by 25 deg. Fahr.

After having been warmed the air is conveyed through galvanised steel ducts, some of which are as large as 3 ft. 6 in. by 2 ft. 6 in., to the various discharge openings situated above head level and provided with regulating dampers. Similar ducts are provided for the extraction of vitiated air.

An interesting feature of the air ducts is that wherever passing through division walls they are fitted with automatic fire shutters, arranged so as to close on the melting of a fuse, and thus to obviate the risk of fire being communicated from one part of the building to another by way of the air ducts.

The heating system for the ground floor and upper stories includes an extensive installation of pipes and radiators through which exhaust steam from the engines in the generating station is drawn by means of vacuum pumps fixed in the engine-room.

This part of the heating installation, as well as the hot-water services and gas supplies for cooking purposes, were executed by Messrs. H. J. Cash & Co., Ltd.

The cooking apparatus was supplied by the Briffault Range Company, Ltd.

Vacuum Cleaner Plant.

In accordance with modern ideas, Messrs. Whiteley have abandoned old-fashioned methods of sweeping and dusting in favour of vaccum cleaning apparatus.

The installation, which is of a very complete character, was made by the Vacuum Engineering Company, Ltd., of London, and presents several features of interest.

With the object of permitting a large number of cleaners to be in use at the same time, three powerful vacuum machines have been laid down, each being an "Otavacum" turbine vacuum cleaner of novel design, with the normal capacity of 800 cub. ft. of air per minute and the maximum capacity of 1,800 cub. ft. per minute. The machine includes a 10-horse-power electric motor, to which is connected an air turbine of simple and ingenious construction. A noteworthy feature of the apparatus is its remarkable freedom from vibration.

Air and dust drawn in by the turbine enter a deflector and pass round a curve, where the dust is separated by centrifugal force and falls into a collecting tank, while the air passes away through an exhaust outlet of 18 in. diameter.

The dust collector can readily be removed for emptying purposes by the aid of a lever which lowers a platform supporting the tank, the lever being employed in the reverse direction for raising the platform and fixing the tank in position after it has been emptied.

The main risers are of 4 in. diameter, with the aggregate length of about 1,000 ft. The horizontal pipes are of 5 in. diameter with the aggregate length of 1,200 ft. All the pipes are of mild steel, of specially smooth interior finish, and exceptional care was taken in the design of bends and junctions.

If rectangular T-pieces were used at the junction of the horizontal pipes with the vertical risers the air would undoubtedly pass in the required direction, but a considerable proportion of the dust would be carried forward into the opposite branch and tend to choke the pipe beyond. Moreover, hairpins and other objects which are invariably found in shops frequented by ladies have an awkward habit of lodging themselves across projections in vacuum tubes, where they constitute a fruitful cause of stoppage.

In order to obviate risks of this kind the junctions between the horizontal and vertical pipes in the installation at Messrs. Whiteley's new premises are in the form of curved Y-pieces, having the effect of guiding both air and dust in the required direction.

The unusually large diameter of the pipes employed is another valuable safeguard, and in addition it contributes to the efficient working of the installation.

For the attachment of the hose-pipes to which the dust-removing appliances are fitted the vacuum pipes are provided with 104 inlets, distributed at convenient points on the walls of the building.

Each inlet has a lid that is kept closed when not in use by a spring, as well as by the pressure of exterior air.

To attach a hose-pipe it is simply necessary to lift the lid and insert the end of the hose, the connexion being made air-tight automatically by means of an india-rubber washer. In order to guard against the accidental displacement of the hose-pipe, the lid of the inlet is provided with a projection which engages a circumferential rib at the end of the pipe. The connexion so formed can readily be broken by opening the lid a little wider.

The hose-pipes are of 2 in. internal diameter, and from twelve to twenty-four of them can be used simultaneously. They are supplied with dust-removing fittings suitable for cleaning floors and dusting walls, fixtures, furniture, and objects of various kinds.

Drainage System and Sanitary Work.

The whole of the work coming under this head, as well as the heating and ventilation systems, were carried out under the supervision of Messrs. Corby & Boyce, consulting engineers, of Buckingham-street, W.C.

From the drawings reproduced in our first article (p. 697 *et seq.*) it will be gathered that the drainage system in Messrs. Whiteley's premises is one of exceptional magnitude. The provision for dealing with storm water is necessarily on a more extensive scale than that usually necessary in business houses, and a novel feature of the sanitary installation is a complete and independent drainage system in the basement story, for the special purpose of carrying away any water used for fire extinguishing purposes.

All the drains are constructed of extra heavy cast-iron socketed pipes, from 4 in. to 9 in. in diameter, jointed with rope lead so as to obviate the employment of yarn.

At all points where branches join the main drain pipes, and at all changes of direction, specially designed cast-iron junction boxes are fitted, the boxes being enclosed in brick chambers, each with a manhole frame and cover.

Some fifty chambers of the kind have been provided in the building, the underground drains alone comprising more than 3,000-ft. run of piping.

The plumbing also covered a very large amount of work, carried out in a most complete manner, and regardless of cost wherever necessary to ensure perfectly satisfactory results.

The main soil and ventilating pipes in connexion are of extra heavy lead drain piping, the wastes being of galvanised steam tubing with lead joints.

In setting out the sanitary system throughout care was taken to comply with the fire-prevention requirements of the County Council, one stipulation being that no pipe should pass through an area of the interior walls dividing up the building into distinct sections as already described.

The sanitary fittings comprise about 100 closets, ninety lavatory basins, forty urinals, and thirty-five sinks. All these fittings were selected by the architects.

Most of the closets were supplied by Messrs. Doulton & Co., Ltd., of Lambeth. They are enclosed by marble divisions in metal framing with teak doors. The basins are of the "Wandle" and "Axis" patterns, the former with lead trap and pottery liner working perfectly with a 2-gallon flush, and the latter with movable lead outlet bend. Doulton's "Paisley" water-waste preventers are provided, with non-corrosive interior fittings.

The lavatory basins, of white glazed "Victorian" ware, and some of marble, were supplied by Messrs. Shanks & Co., Ltd., of Barrhead.

In addition to urinals, Messrs. John Bolding & Sons, Ltd., of London, supplied ten pillar pattern closets, with water-waste preventers and the necessary fittings.

The cold-water supply system, with large storage tanks on the roof, supplies every part of the premises, and includes numerous washing-down hydrants on the main roof, in the loading yards, and at selected points on the three frontages of the building.

Similar hydrants with sprinklers are provided for cleansing the large domes, a special motor and pump having been laid down for the supply of water at the increased pressure requisite.

The whole of the plumbing work was executed by Messrs. Holloway Bros. (London), Ltd., the general building contractors.

GENERAL NEWS.

Professional and Business Announcements.

Owing to the demolition of the premises, No. 107, Bishopgate, London, E.C., Messrs. Leonard & Clarke, quantity surveyors, are removing their offices to No. 7, Camomile-street, Bishopsgate, E.C.

As the London County Council require the premises, No. 55, Lincoln's Inn-fields, London, W.C., for improvements, Mr. A. J. Bolton, architect and surveyor, after some forty-four years' occupation, has removed to No. 30, Theobald's-road, Bedford-row, W.C.

One of the pupils of Mr. G. P. Knowles, of 39, Victoria-street, Westminster, S.W., heads the list in the recent competitive examination for an appointment in the Valuation Office, Ireland.

The Quantity Surveyors' Association, Incorporated.

Mr. Henry Riley has been elected President of this Association for the ensuing year, and Messrs. T. J. Carless and T. E. Bare Vice-Presidents.

Marylebone Municipal Buildings.

The Borough Council have resolved to borrow, with the sanction of the London County Council, 70,000*l*., wherewith to proceed with the erection of the new Town Hall in Marylebone-road, south side, at the west corner of Gloucester-place. In our numbers of December 1-8 last we illustrated the four premiated sets of designs. Those by Mr. T. Edwin Cooper, F.R.I.B.A., were placed first in the competition, and were adopted from the 181 designs submitted.

Extension of the Royal Albert Dock.

The Port of London Authority have offered to Messrs. S. Pearson & Son, Ltd., the contract, amounting to about 1,400,000*l*., for the new dock on the south side of the Royal Albert Dock. The undertaking extends to the making of a main dock 4,500 ft. in length by an average of 600 ft. in width and 35 ft. deep, and having a water area of 65 acres, a dry dock, and an entrance lock 800 ft. by 100 ft., and 45 ft. deep, with a channel lock into Royal Albert Dock.

Presentation to Mr. A. Y. Nutt, M.V.O.

The retirement of Mr. A. Y. Nutt, after forty-four years' service in the Architect's Department and as Resident Architect, Windsor Castle, has been signalised by the gift to him of a silver-mounted dressing-case by the staff of H.M. Office of Works, the Lord Chamberlain's Department, and contractors, workmen, and friends at the Castle.

The Birthday Honours, 1912.

The birthday honours include: Baronetcy—H. L. Tangye, M.I.M.E., of Tangyes, Ltd.; Knighthood—Colonel Prain, F.R.S., Director of the Royal Botanical Gardens, Kew; C. H. Read, P.S.A., Keeper of British and Mediæval Antiquities, British Museum; Dr. C. Waldstein, late Slade Professor, Cambridge University; and W. Wallis, F.S.A., Director Birmingham Art Gallery. K.C.B.—Dr. Kenyon, Director and Principal Librarian, British Museum. C.S.I.—O. C. Lees, M.Inst.C.E., late Chief Engineer and Secretary to the Government of Burma, P.W.D.; and W. E. T. Bennett, M.Inst.C.E., Chief Engineer and Secretary to the Government of the Punjab, P.W.D. K.C.I.E.—Dr. M. A. Stein, C.I.E., Archæological Department, N.W. Frontier Circle. C.I.E.—Major S. D. Crookshank, M.V.O., R.E., Executive Engineer, P.W.D.; D. W. Aikman, P.W.D., Sanitary Engineer, Punjab. C.M.G.—W. J. Downer, I.S.O., Assistant Secretary, H.M.O. Works; and C.I.S.O.—J. Strauchon, Surveyor-General, Land and Survey Department, Dominion of New Zealand.

Mr. E. O. Sachs.

Mr. Edwin O. Sachs, F.R.S.Ed., has been accorded the distinction of a Knight (1st Class) of the Royal Swedish Wasa Order, and the King has granted him permission to wear this decoration, which has been conferred upon him for the services rendered by him in connexion with the design of the Royal Dramatic Theatre at Stockholm.

Cranmer Memorial, Cambridge.

On June 13 was unveiled in the chapel of Jesus College a memorial to Cranmer, who until he became Primate in 1533, was a Fellow of the College. Mr. Albert Bruce-Joy executed the medallion portrait, which is set in a carved alabaster frame, and the likeness is after the picture of 1546 by G. Flicciius, in the National Portrait Gallery.

International Road Congress, 1913.

The third International Road Congress will meet on June 23–28 of next year, in London. Arrangements are made for receptions by the Corporation of the City and the First Commissioner of Works on June 23, and by the Institution of Civil Engineers, in either their new premises or the Albert Hall, on June 25, and by the Royal Automobile Club on June 26. Members of the Congress will inspect roads in the Home Counties, visit Windsor Castle, by invitation of the King, and proceed up the River Thames. On June 26 the Chancellor of the Exchequer will deliver the opening address. On June 27 the final meetings will be held and a garden party will be given by the Surveyors' Institution. On June 28 there will be a banquet in the Hotel Cecil.

Tooley-street Tram Extension.

The proceedings before the Select Committee of the House of Commons with reference to the proposal of the London County Council to extend the tramways in Tooley-street, a distance of 300 yds. nearer London Bridge, is an example of the sort of opposition from private vested interests with which all public improvements have to contend. Although the police gave evidence that the proposal would not create any special difficulty in regulating the general traffic, it was opposed by the traders in Tooley-street. Evidence put forward on their behalf showed that there was an average of 900 vehicles a day using the wharves and other business premises in Tooley-street, and it was contended that any extension of the trams would seriously impede this traffic. It is, of course, necessary and right that all such points should be raised and be given their due weight, but if such arguments are allowed to prevail it is difficult to see how any improvements could be carried out. We are glad to see that the Committee passed the proposals and allowed the extension.

Geological Survey.

It is notified in the report of this department for the year 1911 that in England and Wales the field-work has been carried on in three districts—the Denbighshire district, the Warwickshire district, and the London and South-Eastern district. In the latter, the well-known subdivisions of the chalk and overlying tertiary strata are being traced in detail, together with the various gravels, sands, loams, and brick earth which constitute the superficial deposits. While the mapping of the chalk has an important bearing on questions of deep-seated water supply, that of the tertiary and superficial deposits has a more special importance in all questions connected with the subsoil, such as its suitability for residential, horticultural, sanitary, and other purposes, apart from the economic uses to which the gravels, sands, and brick earth are put. Here also scientific problems of much interest come up for consideration, such as the age and origin of the high-level gravels and loams and their connexion with the glacial deposits of other regions, and the relation of the river terraces and other valley deposits to the various stages of palæolithic time, which have been recognised on the Continent.

COMPETITION NEWS.

A list of current Competitions is printed on page 740.

Mural Decorations, Crosby Hall.

The Committee of the Exhibition of Designs for Mural Painting and for the Decoration of Schools, etc., which is being held at Crosby Hall, Chelsea, announce the following results of competitions:—

Gallery of Modern Art, Dublin.—Awards have been made to Mr. Walter Bayes, Mr. F. Cayley Robinson, Mr. James Mark Willcox. (Sir Hugh Lane offered 100*l*. each for the execution of three panels from designs to be approved by him.)

Middlesex Hospital.—A prize of 50*l*. is awarded to Mr. Donald MacLaren. (Mr. Edmund Davis offered 100*l*. "In the event of a design being accepted and not approved of by the Middlesex Hospital, the sum of 50*l*. will be given in lieu of the execution of the work.")

Commercial-street L.C.C. School.—Miss Louise Jacobs. (A sum of 25*l*. was offered for the execution of an approved design.)

Cable-street L.C.C. School.—Mr. Stanley H. North. (A sum of 25*l*. was offered for the execution of an approved design.)

Design for School Banners.—Miss Gwynedd M. Hudson, Miss Eleanor Pallett, divided. (10*l*. was offered.)

The results of other competitions will be announced shortly. The exhibition will remain open until June 29.

Liverpool School of Town Planning.

In competition for prizes amounting to 50*l*., offered by Sir William Lever, an area was selected to be reconstructed on monumental town-planning lines. The site chosen was the triangular area between Mount Pleasant and Brownlow-hill. The first part of the award has been decided, namely, first prize (15*l*.) to Mr. R. H. Mattocks, second prize (10*l*.) to Mr. T. W. Hooley. These designs, with others, are illustrated in the current *Town Planning Review*.

Astley Bridge, Bolton.

Mr. John Bennett, Lic.R.I.B.A., of Bolton, was the assessor in the competition for Parochial Hall, Men and Women's Institute, Gymnasium, etc., and the following results have been announced:—First, Messrs. Marshall, Robinson, Son, & Wheeler; second, Messrs. Henderson & Brown; third, Mr. Frank Freeman.

The R.I.B.A.: The Soane Medallion.

The attention of intending competitors for the Soane Medallion is called to the following modifications in the conditions:—

1. No restriction is placed on the size of the strainers, but they should be of reasonable size.
2. The plans, sections, and elevations to be drawn to one-sixteenth scale.
3. A section through the front buildings up to and including the rail heads of the lines to be drawn to a scale of 8 ft. to an inch.
4. Plans of the upper floors and basement need not be drawn.

A.A. Competitions, 1912.

The following list of awards has been published officially:—

A.A. Silver Medal and prize value ten guineas, to Mr. R. M. Pigott.

A.A. Travelling Studentship, not awarded.

Ditto, second prize, value 5*l.*, to Mr. B. W. Ridley.

Banister Fletcher Bursary, value twenty-five guineas, to Mr. V. O. Rees.

Architectural Union Company's prize, value 20*l.*, to Mr. W. J. Palmer-Jones.

Herbert Batsford prize, for the best drawing in the Sketch-Book for 1911, value five guineas, to Mr. W. S. George.

Essay prize, award not yet made.

Church of St. George, Colwyn Bay.

Mr. Leonard W. Barnard, of Messrs. Prothero, Phillott, & Barnard, Cheltenham, has been awarded first place in a limited competition for the new church of St. George, to be erected at Colwyn Bay.

Regent's Quadrant Competition.

Competitive drawings must be delivered at the office of the *Builder*, 4, Catherine-street, Strand, on or before 5 p.m. on Friday, June 28. An anonymous competitor, who is sitting for the R.I.B.A. Final Examination, asks if the date can be again advanced, but we regret that this cannot be arranged.

Proposed Baths at Balham.

The Baths Committee of Wandsworth Borough Council have had under consideration the conditions of the competition for the designs for baths they propose to erect at Balham, and are of opinion that competitive designs should be invited and that an assessor should be appointed.

BOOKS.

The Early Norman Castles of the British Isles. By ELLA S. ARMITAGE. (London: John Murray. 1912.)

FOR at least a generation the student of the remains of English castles has had to be content with the collection of papers by the late Mr. G. T. Clark, originally printed in the *Archæological Journal*, the *Builder*, and elsewhere, and published by him as a separate work in two volumes in 1884, under the title of "Mediæval Military Architecture in England."

As Mr. Clark's contributions to the subject extend over some forty-five years they naturally vary in quality, and his published collection, which was in no way revised, is marred by a number of contradictions and other blemishes. Notwithstanding, it is still the only work that treats of castles in general both from the documentary and the architectural standpoints, and until a like work is undertaken on a larger and more extended scale it is not likely to be superseded.

Mrs. Armitage's book is not an attempt to go beyond Mr. Clark's work, but is principally concerned with the refutation of a particular theory which was enunciated by him, that the moated mounts which form the dominant feature of so many English castles are identical with the "burhs" mentioned in the Anglo-Saxon Chronicle, especially in connexion with the operations of Edward the Elder and his sister Ethelfleda, the Lady of the Mercians.

The "burh" theory was first challenged by Mr. J. H. Round in the *Quarterly Review* for July, 1894, and further discussed by Mr. G. Neilson in the *Scottish Review* for October, 1898, with reference to the moated mounts found in Scotland. But the question was first dealt with more fully about a year and half later by Mrs. Armitage in a paper communicated to the Society of Antiquaries of Scotland on "Anglo-Saxon Burhs and Early Norman Castles." In this paper the writer contends that the word "burh" or "burgh" connotes a fortified town and not a moated mount, and that the latter are not of Saxon date at all, but the site of Norman castles. Mrs. Armitage subsequently expanded her views, with special reference to the castles mentioned in the Domesday Survey, in the *English Historical Review* for April and July, 1904, in two communications on "The Early Norman Castles of England," and these papers, with her former treatise, form the basis of the larger work which she has now published.

So far as English castles are concerned, Mrs. Armitage's views have been accepted by all serious students, and the documentary evidence for them was marshalled at length in a paper on "English Fortresses and Castles of the Xth and XIth Centuries," read before the Royal Archæological Institute in 1902, and printed in the *Archæological Journal*, LX., 72–95, by Mr. W. H. St. John Hope, who emphasised the important point that the general distribution of moated-mount castles throughout England could not have been brought about by any one dominant power other than the Norman. It is somewhat strange that Mrs. Armitage should practically ignore Mr. Hope's contribution to the controversy.

The application of the Norman castle theory to the parts of Scotland that were under Norman influence has also been accepted by the Scottish antiquaries, but its reference to Ireland has met with considerable opposition in some quarters from writers who have evidently not grasped the elements of the question. The historical evidence has, however, now been reviewed by Mr. G. H. Orpen, who has demonstrated quite clearly the Norman origin of similar works in certain parts of Ireland.

Mrs. Armitage's book concerns itself with Anglo-Saxon and Danish fortifications, the origin of private castles, the distribution and characteristics of motte-castles (as she prefers to call them), the castles of the Normans in England, motte-castles in North Wales, and in South Wales, and in Scotland and in Ireland, together with remarks on stone castles of the Norman period.

This last chapter is the one that should most appeal to those concerned with buildings; but, unhappily, it is the weakest in what is otherwise an interesting book. It begins with the usual confusion between keeps and castles, which later on leads to the statement that "no stone castles in England are known to have been built by William Rufus"; yet on a previous page (p. 197) we read: "It is well known that between the years 1087 and 1089 the celebrated architect, Gundulf, Bishop of Rochester, built a new *stone* castle for William Rufus." The existing keep of Rochester Castle is also stated to be "the only one in England which authentic history gives" to the time of Henry I., though elsewhere (p. 205, note 3) reference is made to the mention "in the solitary 'Pipe Roll' of Henry I." (for 1130–1) of the tower of keep of Salisbury Castle (*turris Sarum*). The fine tower of Hedingham Castle, which apparently is unknown to Mrs. Armitage (although Mr. Montgomerie has given her a plan of its earthworks), is allowed by most authorities to have been planned by the same engineer as William of Corbeuil's great tower at Rochester, and a similar remark as to their joint planning applies to the keeps of Castle Rising and Norwich, the latter of which, with that of Corfe, Mrs. Armitage thinks may have been built by Henry I. Ludlow, a castle apparently unknown to Mrs. Armitage, could have furnished her with another and a remarkable early example of what she calls a "gatehouse keep," as could the Nottinghamshire castle of Newark. On p. 366 a list is given of "the keeps which the 'Pipe Rolls' show to have been built or finished by Henry II." It begins with Scarborough (1157–74) and ends with Tickhill (1178–81), which is referred to again two pages on as "the last keep he built." The list should, however, have ended with Dover, on which Mrs. Armitage elsewhere tells us (p. 142) that "the 'Pipe Rolls' show that he [Henry II.] spent more than 2,000*l.* on the *turris* or keep of Dover Castle between the years 1181 and 1187."

The book concludes with a number of appendices; also with a very defective index. For example, not one reference to the names in the list of keeps on p. 366 is given, nor does it include Bungay, Burton, Conisborough, Derby, Northampton, Ongar, and Yalden, which are a few of the places not indexed that we have noted in the book. Mrs. Armitage does not seem to have made any reference to four such important castles as Framlingham, Hedingham, Ludlow, or Clare, but haply they have only escaped inclusion in her insufficient index.

The book has been printed by Mr. Murray, which accounts for its excellent typography, and is illustrated by an admirable series of comparative plans by Mr. D. H. Montgomerie.

Stresses and Strains. By F. R. FARROW, F.R.I.B.A. Second Edition, revised. (London: Whittaker & Co. 1912. Pp. 138. 5s. net.)

HAVING reviewed the first edition of this useful manual shortly after its appearance in 1900, it is unnecessary to deal at length with the present issue. Various modifications have been made in the text with the effect of making definitions and explanations still more clear to the student. The calculated examples have been checked throughout, and these have been inserted in the chapters dealing with the branches of the subject to which they refer, instead of being relegated to an Appendix as before. This is a decided improvement, and will make the book much more convenient to students and others.

Concrete Costs. By FREDERICK W. TAYLOR, M.E., Sc.D., and SANFORD E. THOMPSON, S.B., M.Am.Soc.C.E. (New York: John Wiley & Sons. London: Chapman & Hall, Ltd. 1912. Pp. 692.)

THERE is a great deal more in this book than the title denotes. The authors give much valuable practical information concerning the proportioning of concrete, preparing aggregates, handling and transporting materials, mixing concrete, by hand and by machinery, the design of moulds and centring, and other technical matters. The numerous tables of cost relating to the execution of work in plain and reinforced concrete are exceedingly valuable, despite the fact that they are based upon American prices of materials and rates of labour. However, the data are given in such full detail that it is not a difficult matter to arrive at the equivalent costs applying to similar work in this country. The importance of this manual to contractors cannot be over-estimated, and its value to architects and engineers is equally obvious. The book is one which we are able to recommend strongly to the attention of our readers.

FIFTY YEARS AGO.

From the *Builder* of June 21, 1862.

Something to be Done.

WHILE bad drainage, over-crowding, the ill-construction, want of ventilation, and other defects of the dwellings in our large towns certainly cause a multitude of deaths which might be prevented, we must not overlook other causes of evil. We should attend with care to the proper drainage, ventilation, space, etc., of the schools, not only of the poorer classes, but also of those provided for the children of persons in better circumstances. There are great improvements to be made in these arrangements.

Although we have good reason for congratulation that the exertions which have been used have nearly prevented the system of intramural interments in the metropolis, there are still pernicious effects from keeping the dead for a considerable time in dwellings, particularly of the poorer classes; and from the practice which also exists of keeping dead bodies brought from the hospitals and workhouses, and those of people drowned. There are other things which call loudly for remedy, particularly the better supply of water daily to the poor. Taking encouragement from the past, and hoping that the success which has attended recent efforts will lead to greater exertions, we trust that by the time another great international exhibition happen we may be able to make, not only as regards the metropolis, but throughout the country, satisfactory note of sanitary progress.

EDITORIAL SUMMARY.

The leading article is entitled "The Architect in Utopia."

In Notes columns (p. 716) will be found observations on: "Manchester Old Town Hall"; "The University of South Africa"; "The Advertisements Regulation Act."

Notes on some Picture Exhibitions appear on p. 717.

A short article on "Temporary Exhibition Buildings" is given on p. 718.

A summer visit of the Architectural Association was made to Hitchin on Saturday last, a notice of which appears on p. 718.

An article on Messrs. Whiteley's New Premises in Queen's-road, W., is given on p. 719.

In Book Reviews (p. 723) are notices of "The Early Norman Castles of the British Isles"; "Stresses and Strains"; and "Concrete Costs."

The Illustrated Monthly Historical Review (p. 727) includes: "The Altare della Patria"; "The Architecture of Portugal"; "Egyptian Exploration," etc.

The Building Trade Section (p. 732) contains: "Co-partnership and Labour Unrest"; "Concrete-Mixers"; "Building Act Anomalies"; "Institute of Certified Carpenters"; etc.

A concluding article on the Adelphi Hotel, Liverpool, appears on p. 736.

A meeting of those interested in Mural Decorations was held at Crosby Hall, Chelsea, on Tuesday. An interesting discussion took place on Mural Decorations. A report appears on p. 739.

MEETINGS.

SATURDAY, JUNE 22.

The Institute of Sanitary Engineers.—Sessional meeting at the International Exhibition of Non-Ferrous Metals, Royal Agricultural Hall, Islington, N. Professor E. G. Coker, M.A., D.Sc., M.I.Mech.E., will deliver a lecture in the lecture hall on "Lines of Stress in Metals." Illustrated by photographs in natural colours of bodies under stress. 4 p.m.

MONDAY, JUNE 24.

The Royal Institute of British Architects.—(1) To present the Royal Gold Medal for the promotion of architecture, conferred by his Majesty the King, to Mr. Basil Champneys, for his executed works as an architect. (2) To unveil and formally present to the Institute the portrait of the President, Mr. Leonard Stokes, painted by Mr. William Orpen, A.R.A. 8.30 p.m.

TUESDAY, JUNE 25.

The Society for the Promotion of Hellenic Studies.—Annual general meeting. The President, Sir Arthur Evans, F.R.S., D.Litt., LL.D., will take the chair and deliver his inaugural address. Burlington House. 5 p.m.

THURSDAY, JUNE 27.

The London Society.—Debate on Mr. Raffles Davison's paper on "London as It Is, and as It Might Be." Royal Society of Arts, John-street, Adelphi. 8.30 p.m.

CORRESPONDENCE.

Timber Specifications.

SIR,—I should like, with your permission, to say a few words on the correspondence in your valuable paper *re* above.

First, as regards the specification given in your issue of the 7th inst., this is almost word for word taken from a recent book written by a practical timber merchant on the subject, and, unless your correspondent is the author of the said book, surely he should have acknowledged the source of the information.

The specification itself is a very good one from many points of view, but I consider it has the following objections:—In the first clauses—"sizes 12 in. by 4 in. and under, etc."—3 in. by 9 in. is a much better limit, seeing that 4 in. by 12 in. is the largest imported sawn size in deal, and, consequently, being the widest plank converted from the tree, is likely to contain more sapwood. I have found 4 in. by 9 in. proportionately more free in this respect than 4 in. by 12 in., 4 in. by 11 in., or 4 in. by 10 in., but, all things considered, result in favour of 3 in. by 9 in. as the largest; then, again, we do not get many 4 in. by 12 in. from the White Sea; again, the first clause does not define any market quality whatever for sizes 12 in. by 4 in. and under; also White Sea goods of the better qualities are more adapted for joinery than for carcassing. There are several objections to White Sea larch as a general constructional timber, so that if that is specified there would have to be further limitations incorporated.

Fifth clause:—No market quality is here given for the Canadian yellow pine, nor for the American whitewood—and generally the specification would not be reasonable for all classes of work, for the best procurable joinery deal is not required for every job.

My own procedure, which I have successfully followed for the last sixteen years, is to specify the actual manufacturer and trade quality of every material throughout a building, except in such materials where a definite trade quality is equal in all respects among all manufacturers, then I specify such quality, or in those where a source is quite definite, in which last I specify the source, in all cases leaving the contractor free to obtain the goods from whatever merchant he pleases; but on no account whatever should I specify the merchant.

In timber and some other goods I qualify the specifying, for certain reasons, by giving several alternative manufacturers of equal repute. I consider the foregoing procedure must be the proper businesslike way of specifying; as, an instance, the timber importer knows perfectly well what manufacture and market quality he is buying, and only pays for that, so why should not anyone acting for a building owner specify what manufacture and trade or market quality he desires, and see that he gets it? The builder then would only be expected to keep to a definite and obtainable article. We do not get the latitude and indefiniteness common to building works in specifications connected with other industries, nor yet in the wholesale trades from which building materials emanate, and any departure from the absolute definition, if not rectified or a monetary allowance made, soon finds its way into the Courts. Of course, it may be said that if actual manufacturers and qualities are specified it is not everyone who specifies that can differentiate the goods; but I venture to suggest that is one of the original responsibilities of the specification-writer, either personally or through specialist assistance; at least, it is so in business concerns—*e.g.*, an iron merchant or a glass merchant makes a contract for a definite manufacture and quality of material, and examines it when delivered to verify its correctness.

A very potent reason for specifying actual manufacturers and trade designations is—that we must use what is obtainable, taking care that it is specified of the right quality and for the specific purpose; it is of no use specifying general perfections which cannot be obtained in natural products, and if such perfections are desired they must be sought in a different material. I give hereafter some of my own specification clauses for building timbers, chiefly for best-class work, which are based on many years' experience, involving special training with all parties interested; they are part of those I have been using for fifteen or sixteen years, but brought up to date. The shippers are specially selected as being those who use great care in bracking their goods, and who send reasonably large quantities to this market. I could give others equally as good, but it is obviously impracticable to specify many alternative manufacturers and the stocks available, and their immediate conditions would guide me personally as to who I should include.

Carpenter.—The whole of the wood to be perfectly sound, clean, and bright, dry, free from blue sap, and loose, dead, or decayed knots.

The deals, battens, scantlings, and thicknesses for carcassing to be either of the following:—Shippers' second quality "Gefle" Red, of "Stora Kopparbergs Bergslags Aktiebolag's" shipment, or shippers' second quality "Söderhamn" Red, of "Bergvik och Ala Nya Aktiebolag's" shipment. Sizes of carcassing timber under 3 in. by 6 in. to be home-sawn out of wider imported dimensions. The boarding to flats, gutters, and valleys may be imported sawn "Kemi," of "Trävarn Aktiebolaget Kemi's" shipment, and the rough fillets may also be sawn from these. All timbers more than 9 in. deep, or more than 3 in. thick before they are planed, are to be either of the following:—Shippers' prime quality pitch-pine, of "Hunter, Benn, & Co.'s" shipment, "Southern States Lumber Company's" shipment, or "Rix M. Robinson's" shipment; shippers' select quality British Columbian or Oregon pine, of "The British Columbia Mills Timber and Trading Company's Hastings Saw Mills'" shipment, "Stanley Barker Lumber Company's" shipment, or "Portland Lumber Company's" shipment, or converted by the contractor from these, and all to be sawn square-edged or die square, as the case may be, and all thoroughly open-air seasoned.

Joiner.—The whole of the deal joiners' wood to be perfectly sound and thoroughly open-air seasoned, free from coloured sap, large, loose, dead, or decayed knots and shakes, and to have been sawn into thicknesses and stacked and skidded in open-air drying sheds for at least one year before being brought to the bench, and then selected to suit its individual purpose.

The external deal joiners' work is to be executed with either shippers' first quality "Björneborg" Red, of "W. Rosenlew & Co.'s" shipment, or shippers' first quality "St. Petersburg" Red, of "Oscar Steveni's" shipment. The internal deal joiners' work is to be executed with either shippers' first quality "Kovda" Red, of "N. Russanoff Sons'" shipment, or shippers' first quality "Archangel" Red, of "Surkow & Shergold's" shipment. All boards to be home-converted from not larger deals than 3 in. by 9 in., and any sizes under 3 in. by 7 in. to be home-converted from larger imported sizes not exceeding 9 in. wide.

The deal floorboards to be one of the following:—Shippers' extra first quality "Yundsvall" Red, of either "Skönviks' Aktiebolag" shipment, or "Wifsta Warps Aktiebolag" shipment; shippers' extra first quality "Gefle" Red, of "Korsnäs Sågverks Aktiebolag" shipment, or shippers' first quality "Umeå" or "Örnsköldsviks" Red, of "Mo and Domsjö Aktiebolag" shipment, all to be thoroughly dry and thoroughly well open-air seasoned before being used in the work. The Canadian yellow pine to be shippers' first quality Quebec or Montreal broad pine of either of the following shipments:—"Cox, Long, & Co.," "J. Burstall & Co.," "W. & J. Sharples," or "Dobell, Beckett, & Co."; to be stacked and skidded for not less than one year before being used for the work, thoroughly dry and sound, clean, and selected free from stains, shakes, sap, loose or dead knots, and other defects.

The American whitewood to be shippers' prime quality of either of the following shipments:—"T. J. Asher & Sons," "Ritter Lumber Company," or "G. M. Spiegle & Co.," to be stacked and skidded for not less than one year before being used for the work, thoroughly dry and sound, and selected clean and free from shakes, loose or dead knots, and other defects.

All hardwoods generally to be specially selected to suit their respective purposes and free from shakes and knots.

The English oak to be from well-grown, straight-grained, winter-rased trees of not less than 5 ft. diameter, which have been felled not less than six years, to be open-air seasoned in the log for two years, and then sawn up into boards and planks, and stacked and skidded in open-air drying sheds for a further period of not less than four years, thoroughly dry and sound, and cut out free from sap, pith, knots, and shakes, and out of winding.

The oak for sash-frame and casement-frame sills to be either "Odessa" oak, of "J. H. Meyersohn & Co.'s" shipment, or "Danzig" or "Riga" oak of "Julius Potempa's" shipment, cut up into planks and stacked and skidded in open-air drying sheds for at least two years before being used for the work, thoroughly dry and sound, and cut out free from sap, pith, stains, loose or dead knots, and shakes, and out of winding.

The Austro-Hungarian wainscot oak to be either of the following shipments:—"Nasie Oak Extract Factory and Steam Saw Mills Company, Ltd.," "Eissler & Brüder," "Société de Importation de Chêne," "S. Priday," or "Oliver & Sons."

The Russian wainscot oak to be either "Riga," of "B. S. Kahn's" or "Melzer & Co.'s" shipment, or "Liban," of "Blumstein & Rosowsky's" shipment.

All wainscot oak to have been sawn up and stacked and skidded in open-air drying sheds for not less than four years before being used for the work, thoroughly dry and sound, cut wainscot, selected for figure and colour, and free from sap, stains, shakes, knots, or other defects.

The teak to be shippers' prime Moulmein of either of the following shipments:—"Bombay, Burmah, Trading Corporation, Ltd.," "Steel Brothers & Co., Ltd.," or "F. Foucar & Co., Ltd." All to be cut out of plank into thicknesses, and stacked and skidded in open-air drying sheds for not less than four years before being used for the work, thoroughly dry and sound, and selected for colour, and free from stains, shakes, grub, burrows, or other defects.

I have refrained from giving specifications for the mahoganies, walnuts, and other woods, both foreign and British, as I am afraid I have already taken up too much of your space; but I may say that I follow out the same methods, not only for woods, but for every material used in building, as I was early convinced that there was no other proper way

of specifying and discrimination for measuring and valuing; but it necessarily involves commencing to take separate specialist trainings at a very young age, in order to be able by middle life to know what to specify and to see that they are supplied.

B. E. LAINE-PEARSON,
Quality, Quantity, and Value Surveyor.

*** Our original correspondent, "A Reader," states that he is very much indebted to Mr. J. Davis (with whom he has been in communication on the subject), the writer of the book, "Building Timbers and Architects' Specifications"; but the suggested specification is not exactly in the form given in the book. We hope that the correspondence now going on will result in some form of specification which will be generally approved.—ED.]

INTERCOMMUNICATION COLUMN.

Paper for Rubbings.

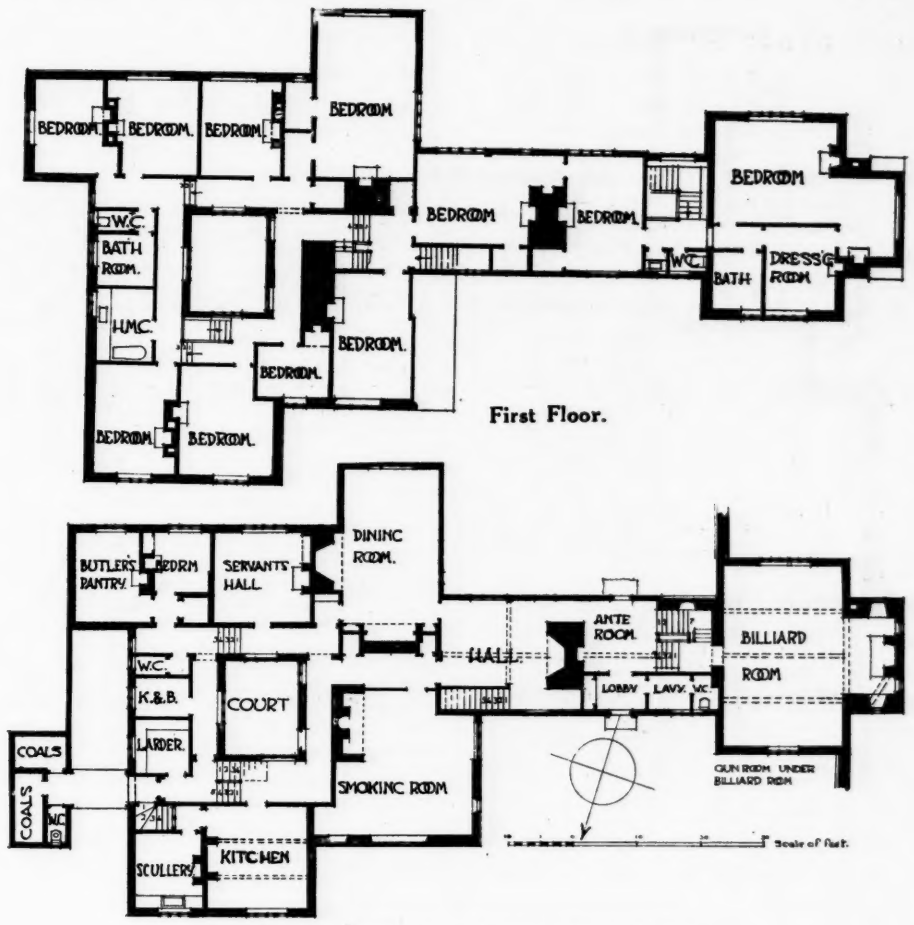
SIR,—Will you be so kind as to inform me what kind of paper is right to use for taking "rubbings" (*i.e.*, "heel-ball") from monumental brasses, especially the heraldic coats? Will ordinary white "kitchen-paper" do?

EVA LETHBRIDGE.

Reply.

SIR,—I have never tried kitchen-paper, but do not think it would be as satisfactory as ordinary ceiling or lining paper, which can be procured from any paperhanger. There are two qualities:—(1) At 6d., which is thin, and perhaps gives slightly the clearer impression, but is rather apt to tear; (2) cost 8d., is thicker, and so less likely to tear. The rolls have about 12 yds. in them. I have always found either of these qualities very satisfactory, but generally use the thicker for large brasses. For shields, I consider the cheaper is perhaps slightly better, but it is rather a matter of personal taste. If the rubbings are to be cut out and mounted on linen, the thinner is certainly the best. Your correspondent does not ask any questions *re* the heel-ball, but this is more important than the paper. It should give a very black mark when rubbed on paper, and should not be too hard, nor should it be sticky. Much of the heel-ball offered is too brown to give satisfactory results. It is well to melt down several of the small pieces in which one buys it, to form a large lump, which can be held in the palm of the hand.

J. S. M. WARD.



"Oldcastle," Dallington, Sussex: Ground Floor.

Mr. Ernest Newton, A.R.A., Architect.

ILLUSTRATIONS.

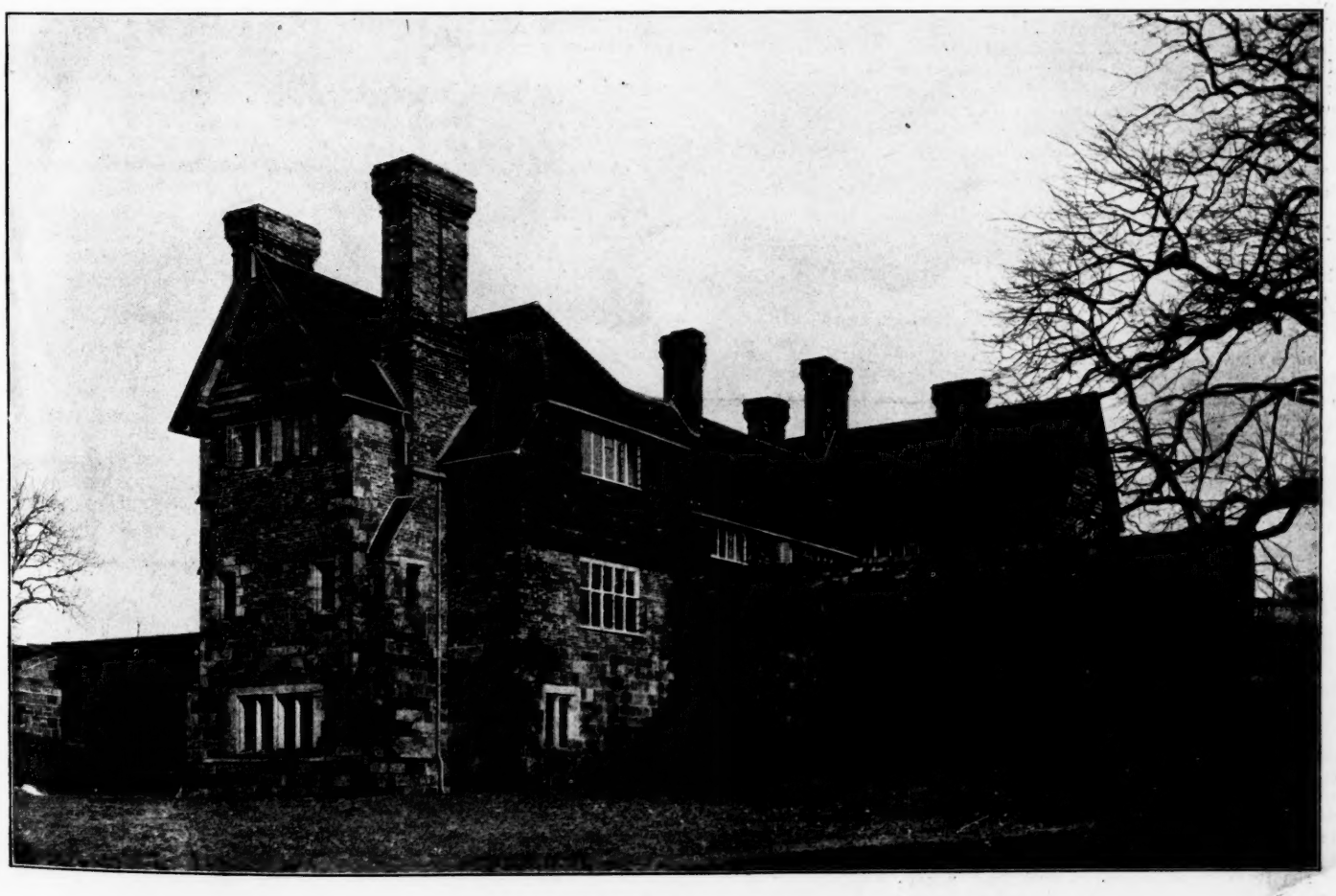
Victor Emmanuel Monument, Rome.

IN our issue of January 5 we illustrated the work of Signor Angiolo Zanelli, who was successful in the competition for executing the Altare della Patria on the Victor Emmanuel Monument at Rome. The design of the other sculptor in the final competition, that of Signor Dazzi, is shown on one of our plates and an article on the artist appears on p. 727.

"Oldcastle," Dallington, Sussex.

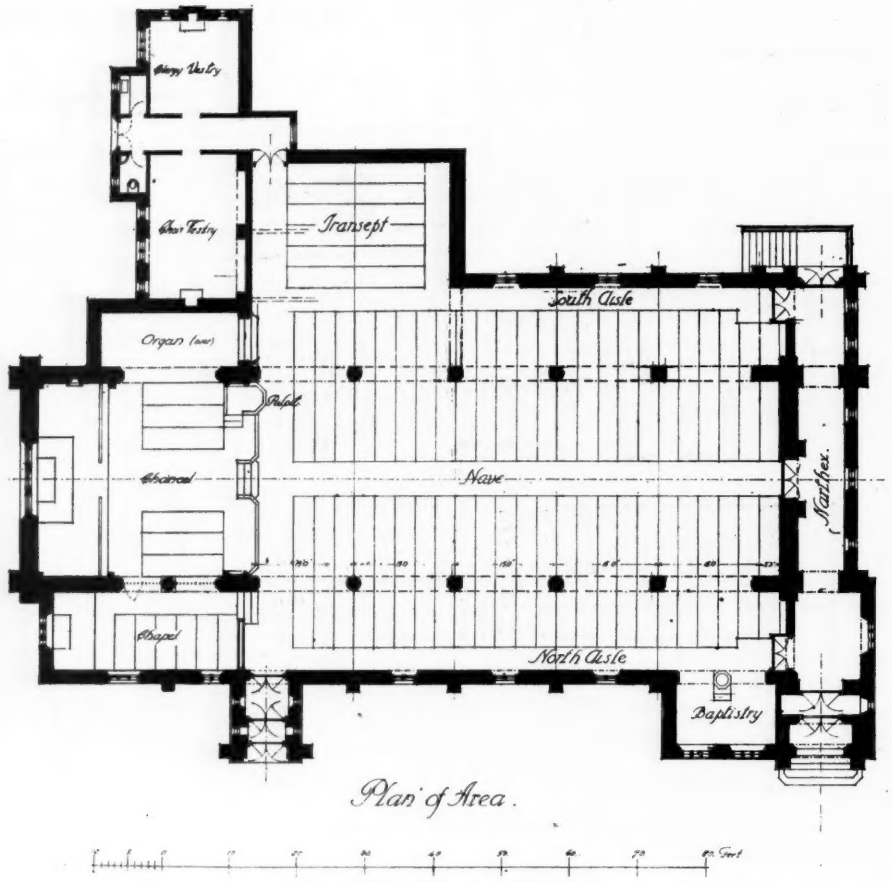
THIS estate is now the property of Lord Justice Buckley.

The house was a small farmhouse in very bad repair. Previous alterations had swept away



"Oldcastle," Dallington, Sussex.

Mr. Ernest Newton, A.R.A., Architect.



St. James's Church, Alperton.

Mr. W. A. Pite, F.R.I.B.A., Architect.

everything of interest except some old chimneys. The old part is in the middle, and pieces have been added at each end. The small drawing shows this. The larger drawing is of the new billiard-room wing. The stone wall on the right of this view, according to local tradition, is all that remains of an ancient castle.

The whole of the building work, including stables, garage, kitchen-garden, walls, cottage, etc., was carried out by Messrs. Lower & Piper, of Punnetts Town. All the glazing and the hot and cold supplies were executed by Messrs. Wenham & Waters, of Croydon. The electric plant was installed by Mr. Stanhope Thornton, of Sanctuary House, Westminster. The drainage and sewage disposal was carried out by the Banner Sanitation Company, of Craven-street, Strand.

Mr. W. Nicholls was architect in charge, and personally superintended the carrying out of all the work.

The architect was Mr. Ernest Newton, A.R.A., of Raymond-buildings, Gray's Inn, London.

The drawings are shown at the present Royal Academy Exhibition, and in referring to them in our issue of May 10 we wrote:—"The quality of Mr. Ernest Newton's work can hardly be grasped for the exceeding cleverness of his draughtsman. A house, which on one small drawing shows low and long, is shown in part on another large one, looking high and almost heroic. . . ." Mr. Newton sent us the following interesting comment:—"Your criticism of the R.A. drawings of 'Oldcastle,' Dallington, suggests that the draughtsman has taken liberties with his subject. It is quite true, as you say, that one view shows a long low house, and the other a high building. Both these drawings have been made from the actual working details and from photographs of the building. I make a point of this, as I always feel that drawings of architecture should show the building as accurately as possible, and this can only be done when the building is actually built. It is impossible to find time to make perspective drawings oneself, nor, with the limited practice that one gets, would such drawings do as much justice to the building as a drawing made by a man who is always in practice. But, seeing the danger of draughtsmen's work, I have always made it a point only to illustrate those buildings which are actually built; and the draughtsman works from detail drawings and from photographs. The suggestion I objected to in the criticism was that the draughtsman had made more or less imaginary sketches."

St. James's Church, Alperton.

THIS church, planned to seat 750 persons, is placed upon rising ground, and the view is from the south-west.

The external materials are picked brown stock with Bracknell brick dressing and Casterton stone.

The roofs are of horseshoe tiles, with a slightly broken colour; these were supplied and laid by Messrs. Ames & Hunter, and possess interesting characteristics.

Internally the building is plastered, the nave arcade being of Farleigh Down stone; the roof, of unstained timber, runs the entire length of the church without any chancel arch. The acoustic qualities of the church are said to be exceptionally good in quality.

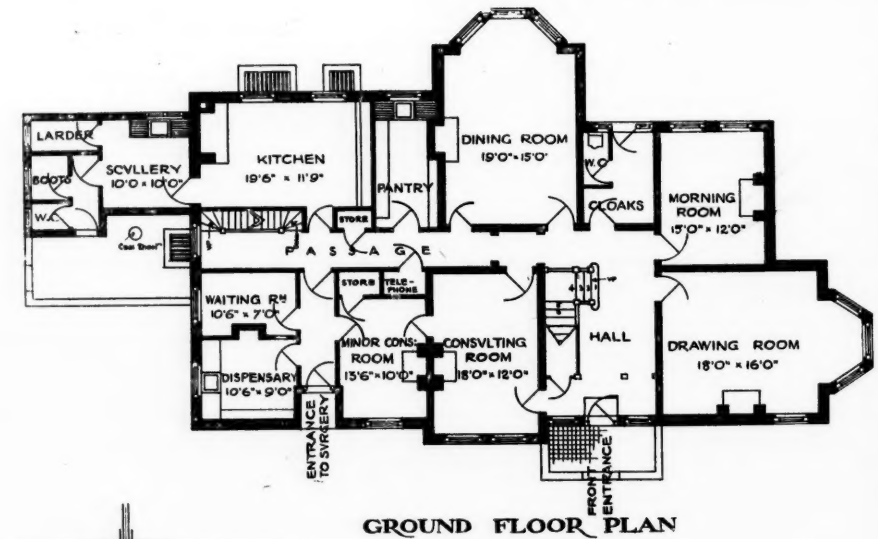
The contract amounted to about 7,800*l*. The contractors were Messrs. Foster & Dicksee, Ltd., and the architect was Mr. William A. Pite, F.R.I.B.A.

House at Ashstead, Surrey.

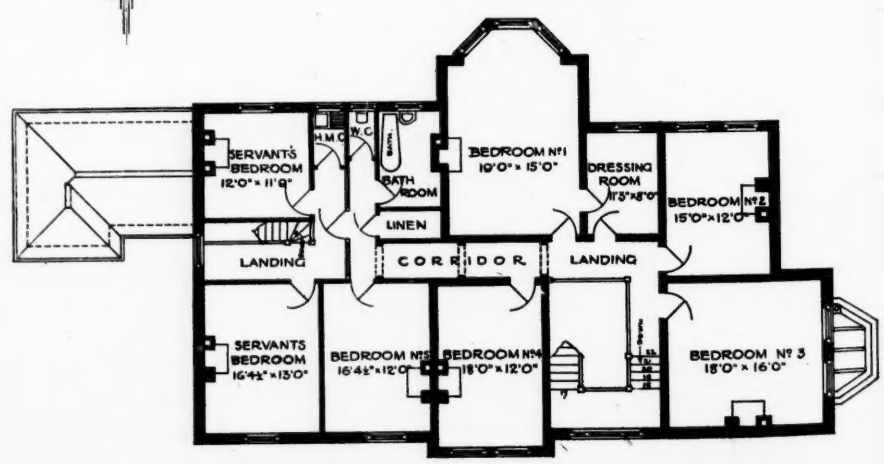
THIS house, which is shortly to be erected from designs by Mr. A. C. M. Edwards, A.R.I.B.A., stands on a prominent site at the corner of Ottways-lane and the main Dorking-road at the end of the village. It is proposed to use a red brick of varied tints with a dark hand-made sand-faced tile for the roof. The house is designed on simple Georgian lines with a view to getting a good effect with the least possible cost. The planning was largely influenced by the necessary requirements of the client's profession, and the surgery and waiting-rooms are designed for easy access and for convenience in communication.

KIRKWALL CATHEDRAL.

The working plans for the restoration of this cathedral of St. Magnus have been prepared by Mr. G. Mackie Watson, architect, of Edinburgh, and the Thoms trustees are inviting tenders for the various works concerned.



GROUND FLOOR PLAN



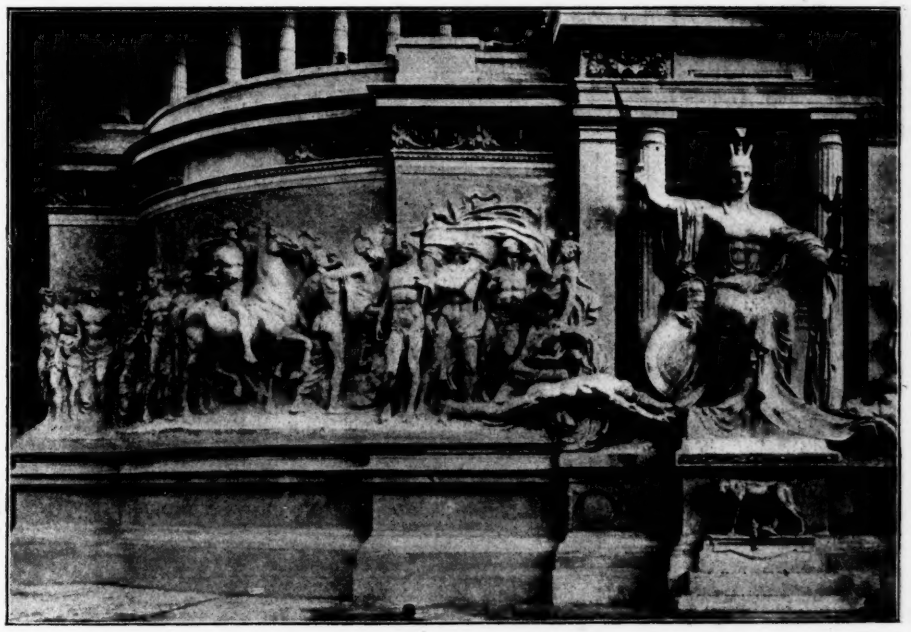
FIRST FLOOR PLAN

SCALE 1 OF 1 FEET.

House at Ashstead, Surrey.

Mr. A. C. M. Edwards, A.R.I.B.A., Architect.

MONTHLY HISTORICAL REVIEW.



Design for the "Altare della Patria."
By Signor Arturo Dazzi.

THE "ALTARE DELLA PATRIA" OF THE VICTOR EMMANUEL MONUMENT AT ROME:

II.—THE MONUMENTAL ART OF ARTURO DAZZI.

IN the *Builder* of January 5 of the present year we had occasion to describe and illustrate in detail the noble reliefs with which Angiolo Zanelli is now adorning the front of the "*Altare della Patria*," which forms the base of the central figure of Victor Emmanuel in his monument at Rome; and in so doing, while giving full view to the magnificent qualities of Zanelli's art, we did not omit to add our appreciation of the merits of the design which was sent in by Signor Dazzi, noting in this connexion that the Royal Commission, when accepting definitely the design of his rival, had recommended to the Ministry that Dazzi's work should not be entirely destroyed. It is now, therefore, a specially grateful task to complete our notice of the reliefs of the "Monumento" by the fuller account, which we then promised to our readers, of Arturo Dazzi's art; and while treating of this generally we shall keep specially in view his fine design for this altar of the "Monumento." Arturo Dazzi was only eleven years old when (in 1892) he entered upon his art studies; and thus, like his successful rival, whom we noted to have been born in 1879, he belongs to the younger generation of Italian sculptors. We have expressed very strongly, in a preceding article, our opinion of the advantages of such an entirely open competition for great national monuments as that which enabled these two brilliant young men—in both cases little more than thirty years of age—to bring their merits before the public of Italy; and we shall not here dwell further upon that point, but proceed to sketch out briefly the main features of Dazzi's earlier career.

As in the case of Zanelli, so here, too, an early provincial success, the triennial competition of the Academy of Fine Arts at Carrara, which he won with his relief of Andrea Pisano at the quarry of Carrara, gave him the opportunity for completing his studies; and he came to Rome, where two months later he won the Albacini national competition, and soon after the "*Concorso Stanzani*"; he married at this time, and a year after his marriage won the "*Pensionato Nazionale*." Now was the moment for a work which should set the seal on this really brilliant series of earlier successes; and, in fact, in his "Toilers of the Apuan Alps," exhibited at Rome in 1905, although the influence of the Belgian sculptor Meunier

Signor Arturo Dazzi.

may be markedly traced, there is originality in the conception, and merit in the by no means easy treatment of the groups of struggling workers beneath this impassive figure of the "Maiden of the Mountain." The year following (1906) saw in the exhibition of Milan his group (a tragedy of modern life), "At the Hospital Door"; while in the group of "The Builders" (*I Costruttori*), which followed this, and which won for him the medal of Rome and the gold medal of the Munich Exhibition, he treats again the male form in muscular movement with the fullest sentiment of realism.

He was now in the last year of his *pension*, and a really fine decorative statue—which was destined to adorn the new Palace of Justice in Rome—that of the Cardinal De Luca, claims our entire admiration. We cannot insist too strongly on the advantage to art of having the best sculptors of their time—and we might here instance Mr. Daniel Chester French in America—to devote their interest to decorative sculpture, which, in its connexion with architecture, affords the highest scope to plastic art; and here in this fine upright figure of the Cardinal, in the XVIIth-century costume, firmly planted on his feet, and with a book of religion held in his nervous right hand, we find a freedom and force of modelling which were worthy of the great Bernini himself.

Let us pass on from this figure to an absolutely different theme, in the classic relief which Arturo Dazzi, after a brief visit to the mountains, commenced to work upon, as his contribution to the decoration of the great altar of the "Monumento"; let us analyse its treatment, its weaknesses, and its success. Both reliefs, we wrote in our previous notice, when speaking of this work as well as that of Zanelli, have this much of subject and treatment in common, that they represent an advancing and ordered group of processional figures, treated in the highest spirit of classic art, and centring in the upright or seated figure of Rome, the "*dea Roma*," the embodied personification of the

"Dea Roma": Design for the Central Figure on the "Altare della Patria."

By Signor Arturo Dazzi.

immortal past as well as the living present and future of the Eternal City.

But where Zanelli's figures possess a certain classic repose, almost realising for us those exquisite lines of the immortal ode of Keats—

> "Who are these coming to the sacrifice?
> To what green altar, O mysterious priest,
> Lead'st thou that heifer lowing at the skies,
> And all her silken flanks with garlands drest?"

—these groups within Dazzi's relief seem tormented with a feverish and frenetic energy, and in some cases are almost tumbling over each other in their hurry to arrive at the journey's end. (See Plate.)

What is that end? It is the colossal figure of Rome, enthroned, with the spear clasped in her right hand and a Victory poised on her left, whose sublime repose contrasts (perhaps intentionally) with the tormented multitude which from either side is hurrying towards her. One is inclined to suggest, why all this desperate haste? For the seated figure shows certainly no intention of moving; and, in fact, one may compare the fundamental idea with that of the "Workmen of the Alps," in that both intentionally contrast the thronging busy crowd of human ants with the serene immobility of an elemental form.

For this "*dea Roma*"—this Rome of

Dazzi—is almost elemental, superhuman; the mere contrast of her colossal size lifts her far away from the crowd of humans, while the traditional wolf at her feet is reduced proportionately to the dimensions of a lap-dog.

One cannot help feeling that there might have been another treatment of the subject which would have been closer to the spirit of Rome than either the Hellenic serenity of Zanelli's relief or the frenzied crowd of his competitor. The Roman Triumph which was designed for the Gonzaga Lords of Mantua by their famous court-painter, and which passed, amid the disasters which befell Mantua in the XVIIth century, into the possession of an English monarch, shows the true Roman spirit in its stately dignity—"the sacrificial beasts wreathed with garlands, smoking incense, the captives, the trophies, helms, corselets carried aloft on spears . . . the war-elephants advancing in stately line heralded by beautifully-draped youths." But it has not yet been given to the XXth century to produce a Mantegna; and the hint contained in these figures at Hampton Court was either not known or not accepted.

The work of Dazzi reaches, in fact, its highest point in this seated figure of Rome, a creation of which he may well be proud; she may be perhaps a little exaggerated in size, but both this and the surrounding groups fit well into the spaces assigned them, the light and shadow is effective, the nudes correct and vigorous, though the sculptor never seems to get far away from his somewhat coarse type of the workers in his "*Lavoratori*" and "*Costruttori*," and his women, rarely introduced, are entirely deficient in charm.

It is obviously force, not grace of form, which dominates the impulse of the young sculptor. Young as he is, he has brought himself by a series of works full of talent and character, culminating in this really fine design for the "Monumento," prominently before the notice of the European public, and we shall watch with appreciative interest for the next steps in his artistic development. S. B.

Fig. 2. Church of Santa Cruz at Coimbra: West Front.

THE ARCHITECTURE OF PORTUGAL.—IV.

(*Continued from page* 579.)

THE great effort of Batalha bore fruit in a widened experience, which shows itself in a number of churches built during the XVth century, many of them modelled in some way or other upon it, and laid the basis of the one really national style, the style which came into flower as Portugal drew to the zenith of her fortunes. In particular, this period witnessed a great development in vaulting skill, which enabled the builders to vault over wide spans, and that in a manner not found elsewhere on the Continent, and without recourse to the involved and contorted ribs in use in Spain and elsewhere. An early example of this type, which at Belem approached so nearly to English fan vaulting, occurs in the Church of Villar de Frades, begun in 1425. As the century advances we have the Graça at Santarem, São João Baptista at Thomar, the Matriz at Villa do Conde, Sta. Maria dos Anjos at Caminha, and the Church of Azurara, all interesting as illustrating in various ways the growth of the Manoelino style, named from the glorious reign of Dom Manoel I. (1495–1521), in which it culminated, though most of its elements were already present and commingled under his immediate predecessors. The whole trend of Gothic art in the XVth century on the Continent was towards restlessness and virtuosity, manifested in intricate structure and exuberant ornament, and at the same time towards naturalistic treatment. In Portuguese Gothic the tendencies were as strong as elsewhere, and formed the groundwork of the Manoelino style, but it also absorbed the circumambient influences of its environment. Among these the most easily distinguishable is that of the Moors, settled for so many centuries in the land itself. Next in view of the agelong maritime intercourse of Portugal with the Netherlands, Flemish and perhaps even German influence is not improbable, even before the XVIth century, when Flemish artists are known to have been imported, while certain forms recall the cognate but on the whole less angular manner of Northern France. Again, *pace* Mr. Crum Watson, who strenuously, but not altogether successfully, combats this view, an Indian flavour is probably to be discerned in at least some examples of the later style. When it is remembered that after Vasco da Gama had reached Calicut in 1497 a Portuguese colonial empire was at once founded in India, and an active commercial intercourse with that country immediately sprang up, it is reasonable to suppose that an art so striking and original as that with which the Portuguese there came into contact for the first time, and specimens of which in the form of small articles doubtless returned in each shipload of silks and spices, would produce an effect on the native style. It is not contended that specific buildings in India were imitated, but rather that the builders and carvers had in their minds vague reminiscences of Indian architecture, and before their eyes the patterns of Indian carved or inlaid or woven work, and the forms employed by Indian metal workers and cabinet makers. Then came the Renaissance, and to this welter of competing influences yet another was added by the Italian and French artists working in the new style. Thus in the later examples of Manoelino the friezes and arabesques, the pilasters and candelabra, and the whole code of Italian ornament were more or less skilfully interwoven.

Fig. 1. Doorway in the Hospital of the Catholic Kings at Santiago de Compostella.

Phenomena indistinguisable from some forms of Manoelino, but without the Indian element, appear in certain parts of Spain, but there the style was but a passing phase which took no root. As instances, a doorway of the south-west cloister of the Hospital of the Catholic

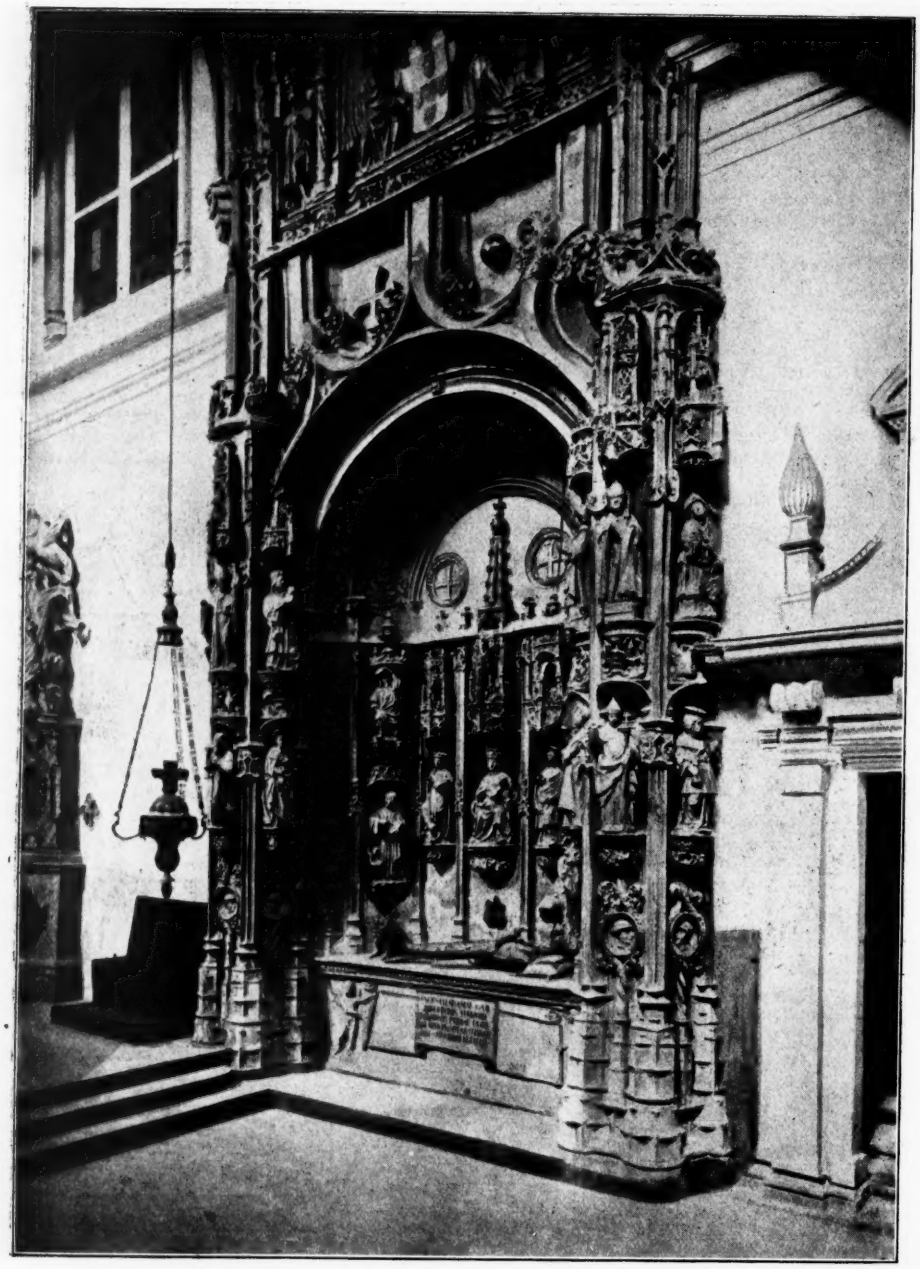


Fig. 3. Tomb of Dom Sancho I. in the Choir of Santa Cruz at Coimbra.

Kings at Santiago de Compostella (Fig. 1) and the court of the Infantado Palace at Guadalajara may be mentioned. Manoelino is in the main a style of decoration affecting but slightly the main lines of plan and structure, but fastening upon the more prominent features, particularly the doors and windows, the piers and arches, and enveloping them in a web of exuberant fancies.

The characteristic tendency of late Gothic to elaboration and complexity brought about the multiplication of members in the piers and the surrounds of openings where they were interwoven and interpenetrated. This was combined with the Moorish cusping and interlacing of arches. As elsewhere, too, the simple pointed form of head gave place either to the round or to some more complex shape, such as the polygonal with straight or curved sides, or that given by two lobed arches, one with convex and one with concave curves, occasionally varied by straight lines being intertwined. The prevalent roll mouldings are laced into various patterns, some of them reminiscent of Romanesque types, and spiral shafts are frequent. The elaboration of the outer wall as the inner outlines of features follows as a matter of course. Openings are framed in by label mouldings curiously bent into gables of complex curvature, which burst into a forest of crockets and finials, while the skyline is fretted with pierced crestings and jagged with pinnacles; and the surfaces of shafts, the spandrels and the panels are carved with bands and diapers of ornament.

The naturalism of the age was not content to bind wreaths round the capitals and trail leafy sprays in the hollows of the jambs; it seized upon the roll mouldings and twined them into cables, which it looped and knotted and tasselled, or into growing stems springing from writhed roots and sprouting with twigs, sometimes lopped in German fashion, sometimes bearing thick bunches of coiled fronds. In windows and cloister arcades stems such as these spread above into lace-like veils of intertwined branches and sprays in lieu of tracery. At other times it would transform a cluster of shafts into a bundle of reeds bound together with ropes or ribbons. The finial which juts from each point of the interlaced cusping, from each angle of the drip mould, and from the summit of every pinnacle becomes a spike of flowers or a knot of leaves.

The Manoelino style, however, is far from being homogeneous, for all its elements are seldom found blended in the same work, and examples from different places and even different parts of the same building differ so greatly from each other that they have little more than the general characteristic of extreme exuberance in common. The period which produced the style was one when the wealth of Brazil as well as the East was pouring into the coffers of Portugal and the lovers of building were able to give free rein to their hobby. Foremost among these was the prince who sat on the throne under the name of Dom Manoel the Fortunate, a typical Renaissance monarch, a splendour-loving patron of art and learning, a Francis I. without his vices. Since, however, over sixty buildings were erected at his expense alone, these articles must confine themselves to a brief description of the salient points in a very few of them.

The portion added by Manoel to the old palace of Cintra is a good example of the earlier style. Here the windows of the eastern wing are of a Moorish type with coupled, semicircular headed, cusped arches enclosed in a rectangular framework, but the latter is formed of twisted and budding branches, which blossom into rich poppy heads above. The Church of the Monastery of Santa Cruz at Coimbra is a relatively sober example of the style without perceptible Moorish influence, and recalling rather a French or Flemish church by the form of the crocketed spires of its turrets and the pinnacled buttresses and swirling labels of its west portal (Fig. 2). In the cloisters, however, a less skilled hand betrays itself, and the segmental arches filled with clumsy tracery, in which the bars are composed of a coarse cable mould, are far from happy in effect. The church contains the tombs of two of the early kings, erected under Dom Manoel (Fig. 3). Almost identical in design, these lofty and elaborate structures reaching to the roof face each other on each side of the choir. Though purely Gothic in general treatment, they exhibit many of the soberer Manoelino characteristics, and were probably designed by a Portuguese. Some of the statuary, however, and sundry Renaissance details introduced here and there are doubtless due to one of the various Frenchmen employed in the church, among whom were Master Nicolas, who had previously worked at Belem and Jean de Rouen, who had collaborated in the Amboise tomb in Rouen Cathedral up to 1521 and afterwards executed the Renaissance pulpit and other works here.

The western choir gallery is fitted with a magnificent series of Gothic stalls (Fig. 4 richly carved and gilded, probably, to judge by the Flemish character of their detail, by the same Flemings who made the reredos of the old cathedral in the same city. Above the canopies runs a deep frieze with foliage cresting, divided by statuettes in niches into panels in low relief, representing the adventures of Vasco da Gama in India. Another example of Flemish workmanship, the choir stalls in the Church of the Order of Christ at Thomar, has unfortunately perished.

EGYPTIAN AND SYRIAN EXPLORATION.

THE last campaigns carried out by the various agencies interested in the exploration in Egypt have been quite up to the average in fruitfulness. Mr. Edouard Naville's work for the Egypt Exploration Fund was in part devoted to further investigations at Abydos, a spot of great sanctity owing to its possession of the reputed tomb of Osiris, in the vicinity of which innumerable kings and other personages had tombs or cenotaphs. He explored a mysterious underground passage, the door of which had been found by Professor Petrie and Miss Murray. It is cut in the marl, and its walls have well-preserved decorations illustrating the Book of the Dead. The roof, consisting of stone lintels 9 ft. long, had at some period been mostly removed. The passage sloped down for some way and eventually led to a series of large subterranean chambers, the purpose of which is not yet clear, but which are considered by Professor Naville to be in some way connected with the tomb of Osiris.

In the course of their more recent work the British School, under Mr. Mackay, were fortunate in finding at Memphis, between two well-known colossi, a gigantic sphinx of the finest work of about 1300 B.C. in excellent preservation though thrown on its side. It is of alabaster and weighs about 80 tons, its measurements being 14 ft. high and 26 ft. long. It will be set up again and remain in position. Professor Petrie, likewise working for the British School, has begun excavating Heliopolis, destroyed by the Persians in 525 B.C., as the key to Memphis, and never since occupied. The massive walls of the temple enclosure, some 40 ft. thick, have been traced out, and an earthwork fort disclosed similar to that discovered at Tell-el-Yehudieh in 1906, a rounded square in plan, a quarter of a mile across. It is assigned to the Hyksos period, being a form of construction quite foreign to native Egyptian practice.

Professor Garstang resumed this winter the explorations of Meroë in the Sudan, under the auspices of Liverpool University, begun in the previous year, and traced the city wall for upwards of 1,000 ft. These are 16 ft. thick and were once from 30 ft. to 40 ft. high. A Roman temple and the baths attached to a palace were also discovered, and in the latter a number of works of art, statuary, medallions, frescoes,

glazed ornaments, and tiles, while the palace of Queen Candace yielded a quantity of jewellery.

One of the most interesting of these objects is a remarkably fine contemporary bronze head of Augustus with the eyes enamelled, which has been purchased by the National Collections Fund for 1,000 guineas, a transaction which has brought down two very desirable birds with one stone—the British Museum is enriched by a valuable work of art, and the Liverpool Fund is able to carry on its work for another year.

A similar spirit of enterprise is manifested by the Ny Carlsberg Museum of Copenhagen, which paid for part of the works at Memphis, and is rewarded by the acquisition of a red granite group of Rameses and the god Ptah, found in that deity's precinct.

The activities of the Liverpool University Expedition are not confined to the Sudan. When the summer comes round Professor Garstang seeks a cooler climate. Last summer was devoted to exploration in the neighbourhood of Antioch, and in particular to that of an artificial mound at Sakje-Geuzi, 500 ft. long and 160 ft. high. It concealed remains of many periods. A Roman building complete except for its roof was uncovered, fine fortifications of the Seleucid period, and, lowest of all, remains of Hittite building dating from about 1500 to 600 B.C. In the Hittite houses of the earlier date traces of charred wooden roofs and verandahs gave evidence of destruction by fire. A smaller mound near by proved to have been the royal residence, whose plan was recovered. The palace stood in the angle of a strongly fortified rectangular enclosure.

HISTORICAL NOTES.

Tudor House, Southampton. THIS fine timber-built house—known generally as "Henry VIII.'s Palace"—has been purchased by the Corporation of Southampton under the Museums Act. It is intended to make it a representative local museum and a centre of interest for the whole of Hampshire. Erected probably in the early part of the XVIth century, it is well worth study; and it is fortunate that it has now become the property of the town. It is interesting not only in itself, but from its position in the old town, and from its close association with other historic buildings and the ancient walls in this quarter. It stands at the south corner of St. Michael's-square, facing the main (west) entrance to the church. Tradition connects it with visits of Henry VIII. to the town, and some have indulged their fancy in picturing Henry here with Anne Boleyn; but, though it is recorded that the King came several times and Queen Catherine certainly once, there is no evidence that Anne was here at all, or that the King ever visited Southampton after Catherine's divorce. Bugle-street, of which this building forms a part, takes its name from a house which stood at the south corner of West Gate-street, and was named Bugle Hall. It had some distinguished owners, one of whom was the celebrated Sir Thomas Wriothesley, Earl of Southampton. Englefield, in his well-known work (1801), states that it was completely destroyed by fire "a few years ago."

Preservation of Historical Structures. REPORTS from all parts of the kingdom attest the growing strength of the movement for the preservation of ancient buildings and objects of historical interest. The following are examples taken almost at random:—

At a meeting of the County Council of Renfrewshire last month reports were received from a number of members on the buildings and ruins in the county whose preservation should be aimed at, and also a return from the clerks of the various parishes enumerating the structures of historical interest existing in each parish. The Surrey Archæological Society has undertaken to draw up a similar list for Surrey, while the County Council is taking steps to preserve ancient cottages at Guildford which are threatened. On June 6 was held the final meeting of the Ayr Auld Brig Preservation Committee, through whose efforts that picturesque bridge with its reminiscences of Burns has been saved from destruction and repaired at a cost of over 12,000*l.*

The National Trust has just issued an appeal for the acquisition of a Roman fort known as Borran's Field, near Ambleside, which is not only interesting as forming part of the system of block-houses erected by the Romans to control the lake district, but a beautiful spot, on the edge of Windermere, whose conversion into a building site would be a disfigurement of the lake. The site—of 20 acres—is offered for 4,000*l.*, of which 1,000*l.* has been promised locally.

Efforts are being made to arrest the destruction by time and weather of the ruins of the Priory Church of St. Botolph, Colchester. The Priory, the oldest house of Augustine Canons in England, was destroyed at the Reformation with the exception of the nave of the church, which was granted to the parishioners for public worship. In the siege of Colchester by Fairfax in 1648 this parish church of St. Botolph suffered severely, as it stood between the fires of the besieged and besiegers. It has since been abandoned, and is now in a critical condition, urgently requiring attention, which it is hoped the Board of Works may be disposed to give it.

Honiton Church. THE rebuilding of St. Michael's Church, Honiton, which was all but burnt down in August, 1911, is now nearly complete. The tower, portions of the walls, and many of the arcade piers survived the fire, and have been incorporated in the new structure. Many of the old floor memorials remain intact and are left in position in the new flooring. Other monuments, though damaged, also survive. Notable among these is the beautiful black marble tomb of Thomas Marwood, physician to Queen Elizabeth, who died at the age of 105. The famous Perpendicular screen erected during the episcopate of Bishop Courtenay (1477–91), Shakespeare's "haughty prelate" (*Richard III.*), was unfortunately entirely destroyed in last summer's disaster.

Discoveries at a Dorset Church. UNDER the above heading the *Times* of June 6 gives an account of some discoveries made in the course of restoration at Whitcomb Church, which was already interesting for the possession of two rude Romanesque doorways, probably of pre-Conquest date. A finely-carved "Celtic" cross has been found embedded in the east wall of the chancel.

"The rood-loft steps have also been discovered, having been walled up probably during the Puritan period. The removal of the plaster on the north wall of the nave has revealed a large extent of fairly well-preserved fresco, representing rather florid XIIIth-century arcading.

Whitcomb was the first pastoral charge held by the dialect poet, William Barnes, a "living" of 13*l.* per annum.

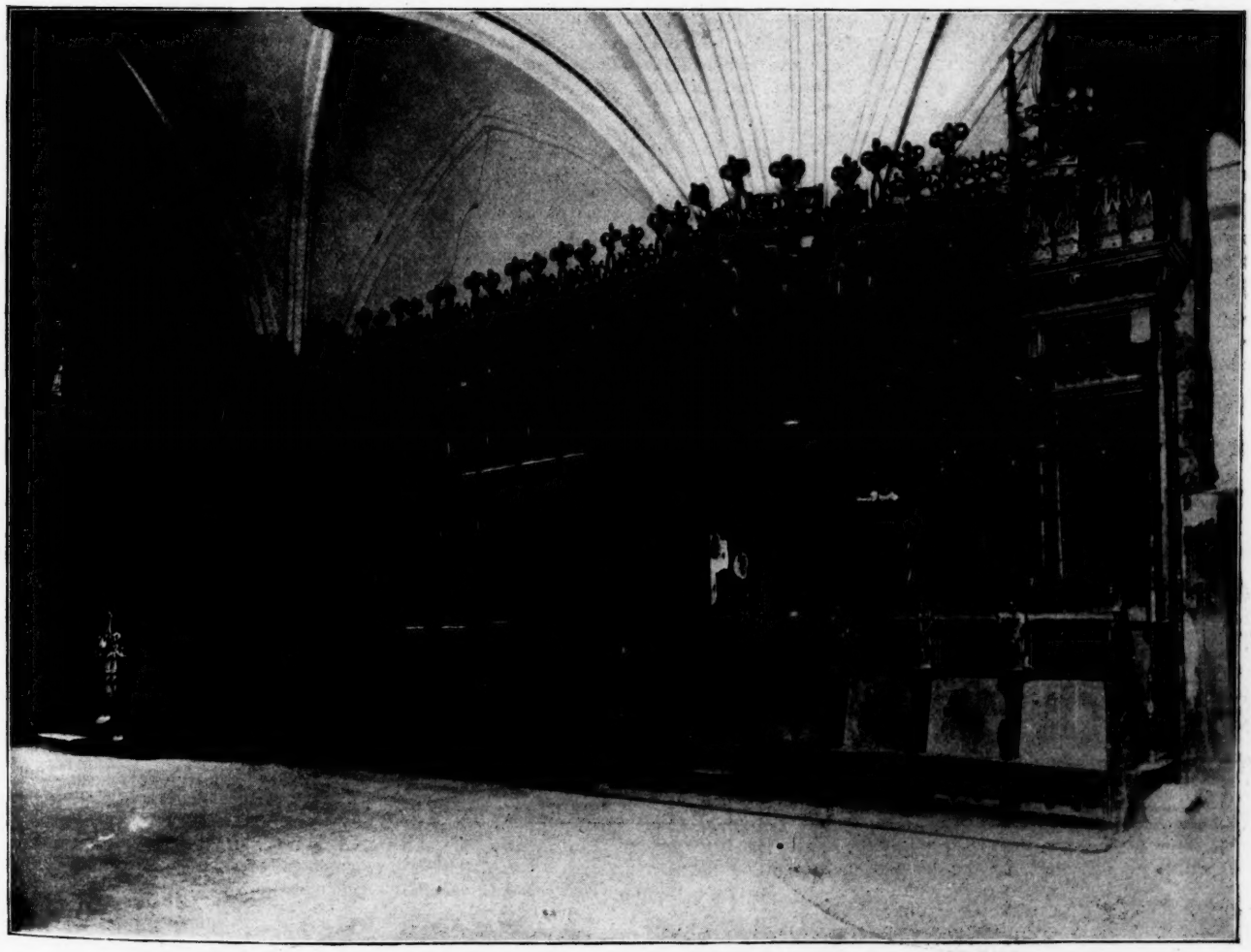


Fig. 4. Stalls of the Monks' Choir at Santa Cruz, Coimbra.

THE BUILDING TRADE.

CO-PARTNERSHIP AND LABOUR UNREST.

A NON-PARTY movement has been set on foot with the object of promoting co-partnership between labour and capital as a remedy for labour troubles and to investigate the causes of failure and success in those schemes which have hitherto been tried. At the same time a tentative Bill has been introduced and read a first time in the House of Commons dealing with this subject. Everyone would welcome a solution of labour troubles which would not only secure to labour an interest in the industry it is engaged upon, but which would also put an end to a kind of strife which benefits no one in this country and which is permanently driving our trade abroad. There are many inherent difficulties in co-partnership schemes; they necessitate restrictions on the use of capital, and the workmen, though they can share profits, can neither provide capital nor share losses. In the case of industries which are keenly competitive these difficulties are increased, whilst in undertakings such as the South Metropolitan Gas Works they are at the minimum. The chief obstacle in the way of such schemes is, however, the attitude both of the trade unions and the Government towards the sympathetic strike. The modern weapon of labour is the general strike; a dispute in one trade in one district, however trivial, is made the pretext of a general cessation of work in affiliated trades throughout the country. It is obvious that so long as this is the policy of the labour leaders they must discourage any movement which attaches labour either to an employer or a trade. All labour must be so detached that the bugle call to battle may unhesitatingly be answered at once. Hence the relations between employer and employed become daily more detached and less friendly. Happily there are now signs in the country that the workmen are tiring of this destructive policy of striking in sympathy, and thus we may hope that more rational methods of conciliation and co-partnership may soon receive a fair and patient trial.

CONCRETE-MIXERS:

THE RANSOME MIXER.

THIS machine, which is supplied in several different styles to suit individual requirements, is of the batch-mixing type.

The mixer proper consists of a rotatory drum fitted inside with scoops of special design, the concrete being discharged from a shoot which is raised during the process of mixing, and lowered when the concrete has been mixed. Fig. 1 is a view which shows the general arrangement of the machine.

The drum is built of substantial steel plates riveted together, and rotates upon two circular cast-iron roller paths riveted to the exterior, the path nearest to the delivery shoot being fitted with an annular toothed rack. In the smaller machines the rack is cast in one with the roller path, and in machines of the larger sizes it is in the form of a separate casting.

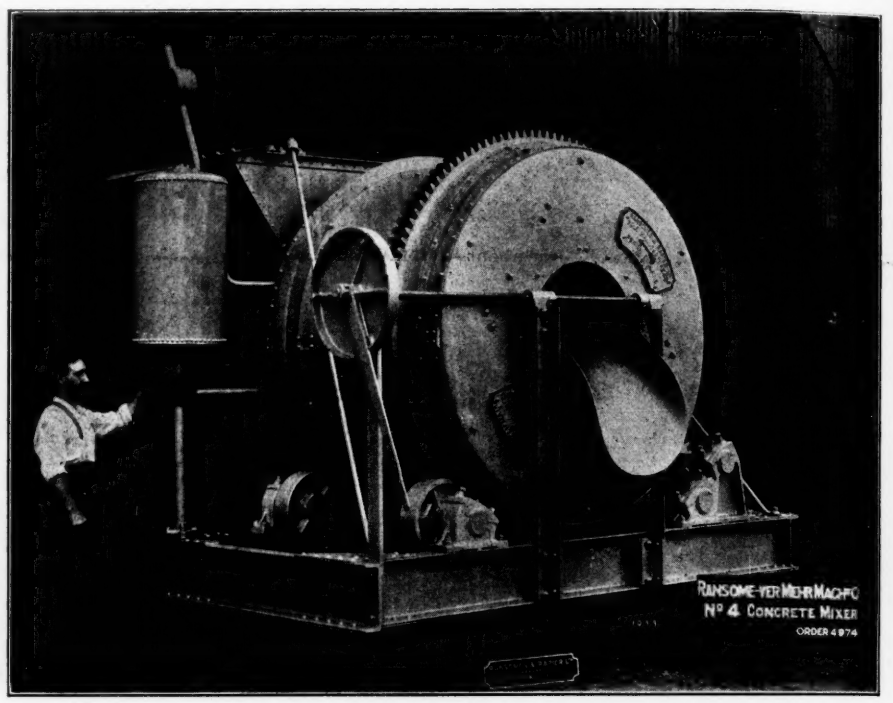


Fig. 1. Ransome Belt-Driven Mixer with Fixed Measuring Hopper.

The paths are spaced as far apart as possible in order to obviate the oscillation that occurs in machines where the roller paths are at or near the centre of the drum. In addition to ensuring steady running, the wide spacing has the effect of increasing the life of the drum.

The frame carrying the drum is constructed of rolled-steel sections strongly connected together. Brass bearings are bolted upon the frame to support the axles of four cast-iron rollers on which the drum rotates. Bearings are also provided for the driving shaft, fitted at one end with fast and loose pulleys, and at the other end with a cast-steel pinion engaging the annular toothed rack on the drum. All bearings are brass bushed, and the pedestals are made in two halves so as to be adjustable. Moreover, the bearings are made dust-proof by a special arrangement of caps and packing pieces, this being an important feature in concrete-mixing plant.

The discharge shoot is of steel plate and fixed in place by means of three vertical angle bars, to the top of which are bolted cast-iron brackets carrying a quadrant and shaft supporting and moving the shoot up and down as may be required, the movement of the shoot being effected by a hand lever.

While a batch of concrete is being mixed the shoot is raised, and as soon as it is desired to discharge the concrete the lever is thrown over, causing the shoot to fall. The concrete then passes direct into the barrow or other receptacle placed beneath the shoot, the entire batch being discharged in five revolutions of the drum.

Fig. 2 illustrates the construction and arrangement of the steel scoops inside the drum, the scoops ploughing through, picking up, and distributing the materials while the drum revolves, in the manner approximately indicated by Fig. 3.

The Ransome mixer is provided with a

Fig. 2. Interior of Ransome Mixer.

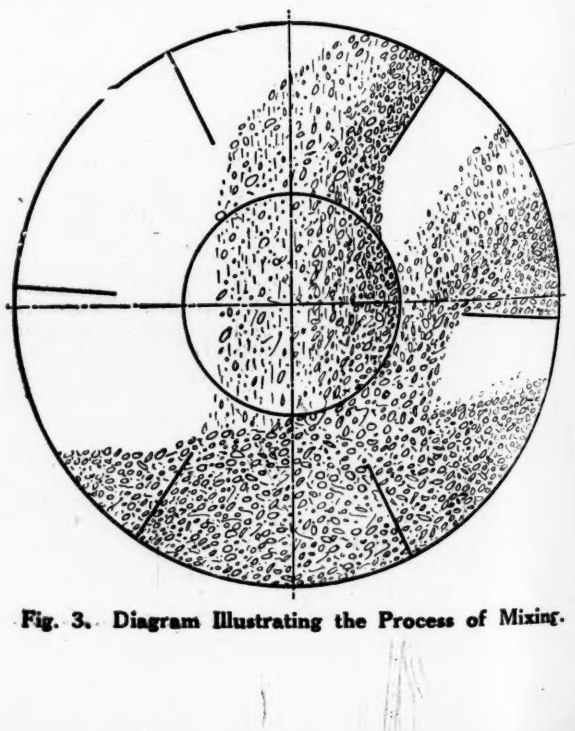


Fig. 3. Diagram Illustrating the Process of Mixing.

measuring feed hopper, either stationary or arranged so that it can be lowered to receive materials and raised to discharge them into the drum.

After the drum has been charged the gate of the hopper is closed and the hopper again charged in order that mixing may be conducted with a minimum amount of interruption.

The machine is also fitted with a water-measuring tank, having an automatic device for delivering the predetermined proportion of water for every batch of concrete.

Fig. 4 is a section of the water-tank, supplied through the valve A, and the screwed pipe D. The float C closes a valve E when the tank is full of water, and by closing the valve A

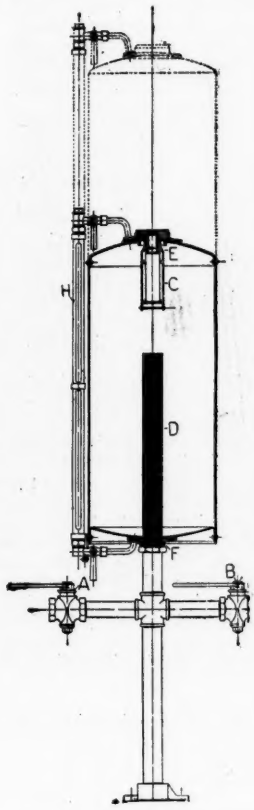


Fig. 4. Ransome Automatic Water-Tank.

and opening a valve B the water flows into the mixing drum until it falls to the level of the top of the pipe D. By screwing the pipe D up or down any required amount of water can be admitted to the drum.

The Ransome mixer is made in sizes ranging from 2 cubic ft. to 2 cubic yds. batch capacity. The frame can be supplied with wheels suitable for road or rails to enable the mixer to be moved readily from point to point, and the machine is finished in various styles for driving by belt from an existing engine or motor, or for being driven by steam engine, internal combustion motor, or electric motor mounted on the frame of the mixer. Another pattern that is often found convenient is one including hoisting apparatus for raising the concrete to the upper floors of a building under construction, the hoist being operated by the man in charge of the mixing machine.

The Ransome concrete-mixer is manufactured by Messrs. Ransomes & Rapier, Ltd., of Ipswich, and supplied by the Ransome-ver Mehr Machinery Company, of Caxton House, Westminster, S.W.

BUILDING ACT ANOMALIES.

THE amusing article we published last week by an architect on the anomalies in the London Building Act draws attention to several points of importance.

With one of his puzzles, however, perhaps we can assist him. We refer to the two instances he gives as to party walls, but he appears to have an excellent legal adviser in "Mr. Quibbles"!

In the case of Drury *v.* Army and Navy Auxiliary Co-operative Society (1896; 2 Q. B. 271) it was held that a party wall when it gets a certain height above the roof of the adjoining building ceases to be a party wall unless there is some statutory provision to make it a party wall above that height. This decision followed a case under the Bristol Improvement Act, 1840, decided in 1873, and the two cases justify "Mr. Quibbles's" opinion in the case of "Mr. D.'s" house, which had a window in a wall "much higher" than "Mr. C.'s" house. When we come to the dormer window erected in "Mr. E.'s" house we find there is a statutory provision qualifying the above statement, to wit, sect. 59 of the London Building Act, 1894. That section makes it necessary to carry up a party wall in buildings, not of the warehouse class, 15 in. above the flat or gutter, and 12 in. higher than any turret, dormer, lantern light, or other erection of combustible materials fixed upon the roof or flat of any building within 4 ft. of such party wall. We can only assume, as did the infallible "Mr. Quibbles," that the dormer window answered this description, and in this case the law is not such "a hass" as we are bound to admit nowadays it often is.

THE INCORPORATED BRITISH INSTITUTE OF CERTIFIED CARPENTERS.

ON Saturday last week a dinner was given to this Institute by the Worshipful Company of Carpenters, in the Hall of the Company, London-wall, the Master of the Company, Mr. W. R. Cobay, presiding. There were also present, representing the Carpenters' Company:—Messrs. Frank Preston, B. J. Jacob, Arthur Jacob, Walter Smith, Percy Preston, Wm. Robertson, Lieut.-Colonel A. C. Preston, and J. Hutton Freeman (Clerk). Representing the Incorporated British Institute of Certified Carpenters there were present:—Professor Elsey Smith and Mr. H. P. Fletcher, F.R.I.B.A., Vice-Presidents; Professor Hy. Adams and Mr. W. Busbridge, Hon. Fellows; Mr. F. G. Rice, ex-President Institute of Builders; Mr. W. T. Sweett, Hon. Secretary; and others.

The loyal toast having been honoured,

Mr. George Ayres
proposed the toast of "The Worshipful Company of Carpenters." In the course of his remarks he expressed the indebtedness of the members of the Institute to the Carpenters' Company for its work on behalf of the craft and its help to the Institute. The Company was to be thanked especially for instituting their examinations, which were very thorough, though students received at the hands of the examiners that kindly treatment which they should expect. The Carpenters' Company had always taken an interest in the trade, and they were now in the van in regard to secondary education, their Trades Training School at Great Titchfield-street being the first school in London which one could really call a trade school. The sanitary examinations of the Company were also of great value and were held in high repute. Then as to the public, he believed that a great work was being done as a result of the lectures which were held in that Hall in the art of building and in the arts connected with building. Without the Carpenters' Company this Institute could not have been in existence, and they were very grateful for the help they had received.

Mr. W. R. Cobay,
the Master, in reply, said they met under the shadow of a great misfortune, as the President of the Institute, Mr. Wilson, was unable to be present on account of a recent motor-car accident. Mr. Wilson was on the way to recovery, and he thought they should send him a letter regretting his accident and wishing him a speedy recovery. He agreed with Mr. Ayres that the Company was a living City Guild, as they still represented a living trade, and, he hoped, a prosperous trade. The Carpenters' Company received its Charter upwards of 500 years ago, and from that day to this they had not lost touch with their own craft. In the past they had occupied a most important position in relation to the trade, having to settle many trade disputes; but differences were settled on a friendly basis, as he wished they always were now. It had been said that the City Companies were of no use except to themselves, as they ignored the requirements of the public; but he thought he could say that they were assisting craftsmen in the trade and were doing something in the matter of apprenticeship.

Mr. B. J. Jacob, J.P.,
then proposed the toast of "The Incorporated British Institute of Certified Carpenters," referring to the growth of the Institute, and said that, although they were not members of the Carpenters' Company, the Company looked upon them as part of the family, and they wished them every prosperity. A certified carpenter was a guarantee of good work.

Mr. Herbert Phillips Fletcher, F.R.I.B.A.,
in reply, thanked the Carpenters' Company on behalf of the Institute for entertaining them to dinner that night. The Company was formed many years ago for the purpose of protecting the members of their craft; in other words, it was a great trade union, but a trade union not on the question of a minimum wage or a maximum wage, but a trade union for the good of the craft. It seemed rather hard that a man who worked hard and earned 1s. 6d. per hour should be put on the same level as the "slacker" who was not earning half his 10½d. per hour; and he believed in every man being paid for the work he did. Although it was essential that some sort of minimum wage should be paid, he thought that a man should be paid for what he really did, although he admitted that it was a difficult matter to arrange. He had always taken an interest in their Institute because the first qualification of a member was that he should be a competent craftsman, and he had the greatest respect for a man who could work decently with his hands. But he did not think the Institute was going forward fast enough, and he thought they had rather got into a groove, and it was for them, and not for the President or Vice-Presidents, to work themselves out of that, and they ought to do it. It was not the fault of the officials that the Institute was not going ahead quickly enough, for they could not have better officials; what was wanted was that the backbone of the ordinary members should be put into the work of expansion. The Carpenters' Company had done a great deal for them, but the members of the Institute were not doing as much as they might. They could see what energy and push had done in other societies, and, as carpentry was never so alive as it is to-day, he thought they ought to increase their membership and get a real grip of the trade and take such a hold as the old Carpenters' Company had 500 years ago. They had to put matters on the right lines, and they should put the Institute in such a position that membership should be regarded as the highest honour that a carpenter could attain to, and in this way the cream of the trade would come to their members. He thought that architects should be encouraged to ask whether the men who were working on their jobs were members of the Institute. Personally he frequently did so.

Mr. J. D. Macnair
then suitably proposed the toast of "The Visitors," and referred to the Library of the Carpenters' Company, which the members of the Institute were permitted to use. He wished that every young man connected with the trade should know something about the Carpenters' Company, and especially about their examinations. It would be an incentive to a lad entering the trade to know of these examinations and to be encouraged to compete for them.

Mr. F. G. Rice
briefly replied, and remarked that the Company had always taken an interest in education, as was shown by the fact that they used to lend that Hall to Mr. Busbridge's School for the distribution of prizes. When he was a young man there were no technical school at Titchfield-street, no London County Council continuation schools and such educational facilities, but Mr Busbridge's school did good work.

THE BRITISH FIRE PREVENTION COMMITTEE'S TESTS.

THE British Fire Prevention Committee's summer season has now commenced at the conclusion of the Whitsuntide vacation, and an interesting programme of fire tests has again been arranged for at the Committee's Regent's Park Testing-station.

The tests include the following for the coming two months, and applications from members and subscribers who wish to attend should be addressed in writing to the Assistant Secretary of the Committee at 8, Waterloo-place:—

Two tests with "Chadrac" fire-resisting

electro-glazing submitted by Messrs. Chater & Sons, of London.

A test with Luxfer fire-resisting electro-glazing submitted by Messrs. British Luxfer Prism Syndicate, Ltd., of London.

A test with a large reinforced concrete floor submitted by the United States Steel Products Company, on behalf of the American makers of "Triangle Mesh Reinforcement."

A test with a pair of experimental reinforced concrete doors submitted by the Chairman of the Belgian Technical Committee for Fire Protection.

A test with asbestos-cement corrugated roofing materials (made in Canada) submitted by the Asbestos Manufactures Company, Ltd., of London.

A series of tests with impregnated textiles, wearing apparel, and similar materials submitted by Messrs. Snowden & Co., Ltd., of London.

A non-inflammable celluloid known as "Cellit" submitted by the Bayer Company, Ltd., of London.

A test with a fire extinguisher (made in England) submitted by the Abbé Daney Fire Extinguisher Company, Ltd., of London.

The Fire-Prevention Committee have further either issued or arranged to issue during June reports on the following tests conducted during the first session of the year, *i.e.*:—

A test with the Abbé Daney Fire Extinguisher (made in France).

A test with two metal doors of the Dahlstrom Metallic Door Company, Jamestown, New York, submitted by Messrs. Roneo.

A partition of the Dahlstrom Metallic Door Company, of Jamestown, New York, submitted by Messrs. Roneo.

Two tests with "Copperlite" fire-resisting glazing submitted by Messrs. Hayward Brothers & Eckstein, Ltd.

NATIONAL INSURANCE ACT.

IN Tuesday's Parliamentary Papers, Mr. Butcher asked the Chancellor of the Exchequer whether, in cases where a master builder or other employer in a trade mentioned in the Sixth Schedule to the National Insurance Act employs a son of the age of sixteen and upwards in his trade wholly or mainly by way of manual labour and pays such son wages, such son must become insured against unemployment under Part II. of the Act and he and his father must pay the contributions mentioned in the Eighth Schedule to the Act: and whether the Board of Trade have yet made regulations for the payment and collection of such contributions, and, if so, how and to whom such contributions are to be paid.—Mr. Robertson replied that a son employed by his father in the circumstances mentioned in the question would appear to be a "workman" as defined by sect. 107 (1) of the Act, in respect of whom contributions to the unemployment fund are payable at the rates set out in the Eighth Schedule and in accordance with the regulations of the Board of Trade.

GENERAL BUILDING NEWS.

PARISH HALL, CROSBY.

The new Parish Hall for St. Luke's Church has been erected at a cost of about 3,500*l.* from the designs of Messrs. Woolfall & Eccles, FF.R.I.B.A., of Liverpool. The hall provides accommodation for 500 persons, and other rooms include lecture, club, and class rooms.

NEW BATHS, WALLSEND.

The new public baths have been erected from the plans prepared by Messrs. Liddle & Browne, architects, of Newcastle. The swimming-bath hall is 118 ft. long by 56 ft. wide, with galleries and accommodation for about 700 people. The builders were Messrs. W. Franklin & Son, of Newcastle, and the engineer was Mr. T. D. Hall, of Wallsend.

MINERS' HOMES, MURTON.

The twelve homes which are being erected for aged miners at East Murton, have been designed by Messrs. C. Johnson & Son, architects, of Bishop Auckland. The houses are of one story, built with faced bricks up to the window and finished rough cast and roofed with Westmorland slates. The builders are Messrs. J. & T. Parker, of Sunderland.

BRANCH LIBRARY, BRADFORD.

The new branch library at Great Horton, Bradford, is being erected at a cost of about 3,500*l.* from the plans of Mr. W. Williamson, the City Architect. The library will have accommodation for 12,400 volumes and reading rooms are provided for adults and children, and the upper floor will be entirely devoted to a ladies' reading-room.

NEW BUILDINGS IN LONDON.

Leather warehouse, Weston-street, Bermondsey, S.E.; Mr. A. E. Anderson, architect, 35, Abingdon-street, Northampton; Messrs. J. Greenwood, Ltd., builders, Arthur-street West, E.C. Factory for Messrs. Park, Davies, & Co., chemical manufacturers, Staines-road, Hounslow, W.; Messrs. Edmeston & Gabriel, architects, Union-court, Old Broad-street, E.C.; Mr. W. Downs, builder, Hampton-street, Walworth, S.E. Club premises, Bermondsey, S.E.; Mr. A. W. West, architect, 3A, Lyall-street, Belgrave-square, S.W. Offices for Bank of South America, Moorgate-street, E.C.; Messrs. Dunn & Watson, architects, 35, Lincoln's Inn-fields, W.C. Hospital, Maida Vale, W.; Messrs. Young & Hall, architects, 17, Southampton-street, W.C.; Messrs. J. W. Falkner & Co., builders, 24, Ossory-road, Old Kent-road, S.E. Chapel, Collyer-place, Camberwell, S.E.; Mr. L. G. E. Stelling, on behalf of the Building Committee of Hanover Chapel, Peckham, S.E. Rebuilding Nos. 51 and 52, Chancery-lane, and 22 and 23, Southampton-street; Messrs. Thurgood & Martin, surveyors, 27, Chancery-lane, W.C.

TRADE NEWS.

The "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air-inlets, has been supplied to Messrs. Vickers', Ltd., new offices, Barrow-in-Furness.

In reference to the illustration of Nos. 48-52, Fleet-street, E.C., for the "Norwich Union" Insurance Society, which we published in our last issue, Messrs. Patman & Fotheringham, Ltd., are the general building contractors for the work.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

AT the last meeting of the London County Council the following applications under the London Building Acts were dealt with. (The names of the applicants are given in parentheses):—

Lines of Frontage and Projections.

Brixton.—Iron structure upon the forecourt of No. 205, Clapham-road, Brixton (Mr. H. J. Doughty).—Consent.

City of London.—Oriel window at Fenchurch-chambers, Lime-street, City (Messrs. Fair & Myer).—Consent.

Dulwich.—Projecting porch at No. 51, Underhill-road, Dulwich, next to Bellvoir-road (Messrs. H. King & Son for Mr. D. Rose).—Consent.

Hackney, South.—Erection of buidings on the eastern side of Lower Clapton-road, Hackney, northward of No. 208, Lower Clapton-road (Messrs. J. Garey & Son for Messrs. F. W. Glover & Son).—Consent.

Hammersmith.—Projecting sign at the Temperance Billiard Hall, King-street, Hammersmith (Temperance Billiard Halls, Ltd.).—Consent.

Hammersmith.—Projecting illuminated sign at the "Red Cow" public-house, Hammersmith-road, Hammersmith (Messrs. Bull & Bull).—Consent.

Hampstead.—Erection of additions at No. 40, Canfield-gardens, Hampstead, next to Fairhazel-gardens (Mr. C. Saunders for Mr. B. Groner).—Consent.

Hampstead.—Erection of a one-story shop in front of No. 335, Finchley-road, Hampstead (Mr. W. A. Forsyth).—Consent.

Hampstead.—Erection of a bay-window at No. 5, Belsize-road, Swiss-cottage (Mr. W. A. Watts for Mrs. F. M. Jacklin).—Consent.

Hampstead.—Erection of an addition at No. 194, Goldhurst-terrace, Hampstead (Mr. C. H. Webb for Mr. J. E. Sutton).—Consent.

Hampstead.—Erection of an iron and glass porch in front of No 44, West End-lane, Hampstead (Messrs. A. H. Paine & Son).—Consent.

Hampstead. — Erection of a projecting window upon a balcony in front of No. 22, Chesterford-gardens, Hampstead (Messrs. Spalding & Myers for Mrs. Tien).—Consent.

Kensington, North.—Erection of a wood and glass showcase at No. 124A, High-street, Notting-hill (Mr. S. Newcombe for Mrs. E. Carpenter).—Consent.

Lewisham.—Greenhouse in the garden of "Hyndford House," Inglemere-road, Forest-hill, abutting upon Bampton-road (Mr. G. Hayward).—Consent.

Lewisham.—Illuminated sign in front of No. 295, High-street, Lewisham (Messrs. B. Weatherley & Sons).—Consent.

Lewisham.—Ten houses on the western side of Perry-rise, Lewisham (Mr. G. H. Paine for the Pery-rise Land Company).—Consent.

Marylebone, East.—Retention of balconies in front of Nos. 3 and 4, Princes-street, St. Marylebone (Mr. W. H. White).—Consent.

Marylebone, East.—Erection of a projecting balcony at No. 89, Harley-street, W. (Mr. W. H. White for Mr. D. J. Armour).—Consent.

Marylebone, East.—Erection of iron and glass roofs over the entrances to the Tottenham Court-road tube railway-station (Mr. W. E. Mandelick for the London Electric Railway Company).—Consent.

Norwood.—Erection of a projecting sign at the Temperance Billiard Hall, Coldharbour-lane, Brixton (Temperance Billiard Halls, Ltd.).—Consent.

Norwood.—Coal store building at No. 1, Carnegie-terrace, Herne Hill-road, Norwood (Mr. H. Gardner).—Consent.

Paddington, South.—Erection of a one-story shop at No. 38, Queen's-road, Bayswater (Messrs. Veale & Gibbs).—Consent.

Paddington, South.—Projecting screen in front of No. 7, Radnor-place, Paddington (Mr. E. J. Griffiths, M.P.).—Consent.

St. George, Hanover-square.† — Wooden screen at No. 35, Warwick-street, St. George, Hanover-square (Messrs. C. E. Fry & Sons).—Consent.

St. George, Hanover-square.—Illuminated sign in front of No. 48, Dover-street, Piccadilly (Premier Wine Company, Ltd.).—Consent.

St. Pancras, West.—Illuminated sign at No. 292, Euston-road, St. Pancras (Mr. H. Monighetti).—Consent.

Strand.—Projecting balconies at No. 2, 3, and 4, Tavistock-street, Covent-garden (Mr. Lewen Sharp for Mr. G. Monro).—Consent.

Strand.—Projecting sign at the Dudley Art Galleries, No. 169, Piccadilly (Messrs. W. A. S. Benson & Co., Ltd., for the Fine Art Society, Ltd.).—Consent.

Strand.—Three illuminated signs in front of No. 149, Oxford-street (Messrs. Crane & Sons, Ltd.).—Consent.

Strand.—Retention of sixteen arc lamps and an illuminated sign at No. 103, Oxford-street (Messrs. Barlow Brothers & Co.).—Consent.

Wandsworth.—Erection of one-story shops in front of "Oakmead," Balham High-road, Balham (Mr. J. J. Taylor).—Consent.

Wandsworth.—Porches to six houses on the south-western side of Brudenell-road, Wandsworth, and one house on the north-western side of Ravenfield-road (Messrs. Swain & Selley).—Consent.

Wandsworth.—Projecting sign at No. 415, York-road, Wandsworth (Mr. E. Pearce).—Refused.

Westminster.—Steps forming an approach to Nos. 13 to 16, Medway-street, Westminster (Messrs. H. Field & Simmons for the Right Hon. R. McKenna, M.P.).—Refused.

The recommendation marked † is contrary to the views of the Metropolitan Borough Council concerned.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ALDERSHOT.—Business premises for Messrs. Dickenson & Co.; Messrs. Friend & Lloyd, 45A, Grosvenor-road, Aldershot.

Ammanford.—School (7,000*l.*); Mr. W. V. Morgan, architect, 24, King-street, Carmarthen.

Arbroath.—Infirmary (12,000*l.*); Mr. Hugh Garvin, architect, 42, Hill-street, Arbroath.

Armagh.—Synod Hall (4,000*l.*); Messrs. M'Laughlin & Harvey, builders, Dartmouth-road, Dublin.

Arnside.—Enlargement of parish church (2,000*l.*); Messrs. Austin & Paley, architects, 24, Castle Park, Lancaster.

Ashford (Middlesex).—Church of St. Hilda; Mr. J. S. Alder, architect, 1, Arundel-street, Strand, W.C.; Messrs. Dorey & Son, builders, Brentford.

Aspatria.—Additions and alterations to Grapes Hotel for the Maryport Brewery Company.

Ayr.—Building, Garden-street (1,000*l.*), for Messrs. W. Mitchell & Sons, provision merchants, 16-22, Main-street, Newton, Ayr.

Babbacombe (Devon).—Block of shops; Mr. T. G. Moore, architect, Fleet-street, Torquay.

Bacup.—Additions to India Cotton Mill, New Church-road, for Messrs. J. Hoyle & Son, Ltd.

Barrow-in-Furness.—Extensions to isolation hospital; Mr. A. Race, Surveyor, Town Hall, Barrow.

Barry Dock.—Drill hall; Messrs. Teather & Wilson, architects, Queen-street, Cardiff: Messrs. D. Davies & Son, builders, Trade-street, Cardiff.

Batley.—Additions to Blakeridge Mill for Messrs. J. T. & J. Taylor, Ltd., woollen manufacturers.

Bexhill.—Picture theatre; Mr. A. C. D. Hicks, architect, 4, Sea-road, Bexhill.

Bideford (Devon). — United Methodist

* See also our list of Competitions, Contracts, etc., on another page.

chapel; Mr. W. B. Rees, architect, 37, St. Mary-street, Cardiff; Mr. C. Bryer, builder, Bridgwater.

Blaby.—Alterations at workhouse (2,090*l.*); Mr. H. D. Smith, builder, 28, Central-avenue, Wigston Magna, Leicester.

Bourne.—Isolation hospital, South-road; Mr. T. Lake, Surveyor, Rural District Council Offices, Bourne.

Bristol.—Hospital (35,000*l.*); Messrs. Oatley & Lawrence, architects, Edinburgh-chambers, Baldwin-street, Bristol; Messrs. W. Cowlin & Son, builders, Stratton-street, Bristol. Academy of Fine Arts; Messrs. Silcock & Reay, architects, Milsom-street, Bath; Messrs. Dallow & Son, builders, Blackheath, Birmingham.

Burnley.—Weaving shed, Barden-lane, for the Barden Mill Company.

Burscough Bridge (Ormskirk).—Additions to seed warehouse, Mart-lane, for Messrs. J. Martland, Ltd.

Cardiff.—Grand stand, Cardiff Arms Park; Mr. A. Leitch, architect, 36, Dale-street, Liverpool.

Carnarvon.—Alterations to No. 23, Castle-square, for the Prudential Assurance Company.

Cheadle.—Cottage hospital; Mr. F. S. Cox, Clerk, Guardians' Offices, Cheadle.

Cheltenham.—Additions at infirmary (700*l.*); Mr. R. R. Skemp, builder, Great Norwood-street, Cheltenham. Domestic science block, Gloucester-road School; Messrs. Chatteris & Smithson, architects, Regent-street, Cheltenham.

Chingford.—Erection of pumping-station, gas-producer house, and two houses, etc. (14,818*l.*); Messrs. Charles Wall, Ltd., builders, 4, Lloyd's-avenue, E.C.

Chorley.—Weaving shed, Stump-lane, for Messrs. Stuttgart & Nuttall.

Cleaden.—Sub-station, The Clusters, for the County of Durham Electrical Supply Company.

Cleckheaton.—Additions to Exchange mills and offices for Messrs. C. Hirst & Sons, Ltd., wire drawers and manufacturers.

Clifton (Bristol). — Christian Brothers College; Mr. J. Bevan, architect, Liverpool-chambers, Corn-street, Bristol.

Consett.—Theatre and shops, Front-street, for the Consett Theatre, Ltd.

Crombie.—Workmen's hut at Royal Naval Ordnance Depôt: Messrs. Scott, Marshall, & Co., fireproof door manufacturers, 2, St. Andrew's-square, Edinburgh.

Dalkeith.—Conversion of St. John's United Free Church into picture palace; Mr. Wilber Harlen, Portobello, N.B.

Dartford Heath.—School; Messrs. Friday & Ling, builders, North-road, Erith.

Dewsbury.—Brass factory, etc., Jack-lane, for Messrs. Brown & Naylor, brass founders, 78, Town-street, Stanninglee, Leeds.

Falkirk.—Extensions to electricity works, High Station-road (1,300*l.*); Mr. J. McMillan, Electrical Engineer, Town Hall, Falkirk.

Farnham. — Proposed twenty houses, Crondall-lane; Mr. R. W. Cass, Surveyor, Urban District Council Offices, Farnham. Residence near Farnham; Mr. A. H. Guyer, architect, South-street, Farnham.

Filey.—Bank, etc., corner of Murray and Union-streets; London Joint Stock Bank, Ltd., 5, Princes-street, E.C.

Gilmerton.—School (400 places); Mr. James I. Morrison, architect, York-place, Edinburgh.

Glasgow. — Stores, Great Eastern-road: Messrs. A. G. Barr & Co., Ltd., mineral water manufacturers, 482, Great Eastern-road, Glasgow. Church hall, Calder-street and Polmadie road; Trustees, Polmadie United Free Church. Shops and houses, Castle-street, for Messrs. P. & F. Sherry, wine and spirit merchants, 289, High-street, Glasgow. Alterations and additions to buildings, Buchanan-street and Germiston-street, for the Caledonian Railway Company, St. Rollox, Glasgow. Picture hall and offices, Baker-street, Langside; Mr. James Hamilton, printer, 213, Buchanan-street, Glasgow. Extensions to buildings, Stanley-street and Vermont-street, for Messrs. Hay Brothers, Ltd., confectioners, Vermont-street, Kinning Park, Glasgow. Additions to bakery, Hydepark-street, for Messrs. Bilsland Brothers.

Grange.—Parish hall, Kent's Bank-road; Messrs. Postlethwaite & Dawson, builders, Grange.

Green Street Green (Dartford). — Engine-house, cottage, etc. (2,186*l.*): Messrs. William F. Blay, Ltd., builders, 30A, Spital-street, Dartford.

Grimsby.—Children's homes; Mr. J. F. Wintringham, Clerk, Guardians' Offices, Great Grimsby.

Hereford.—School: Mr. G. H. Jack, County Architect, Shire Hall, Hereford.

Hindley.—School (150 places): Managers, St. Nathaniel's School, Hindley.

Horsham.—Large residence, St. Leonard's Forest; Messrs. J. Carter, Jonas, & Sons, architects, 8A, Whitehall, S.W.; Messrs. Norman & Burt, builders, London-road, Burgess-hill, Sussex.

Ipswich. — Factory, Princes-street; Mr. George W. Leighton, architect, 21, Museum-street, Ipswich.

Kelloe.—Remodelling Primitive Methodist chapel (500*l.*); Mr. J. W. Hayes, architect, Wingate; Messrs. Regan Brothers, builders, Trimdon Village.

Leeds.—Proposed extensions and improvements at infirmary (150,000*l.*); Board of Management.

Llandudno. — Convalescent home (6,000*l.*); Mr. S. Salt, builder, Leek.

Llanelly.—Twenty-five houses (3,800*l.*); Mr. T. Rogers, builder, Manselton, Swansea. Bank for Lloyd's; Messrs. Waller & Son, architects, College-green, Gloucester; Messrs. Willcocks & Son, builders, 53, Darlington-street, Wolverhampton.

Lowestoft.—Plans have been passed for three houses, Camden-street, for Mrs. C. Pipe, and three houses, Beccles-road, for Mr. E. Darby. Mr. C. F. Peachman has lodged plans for six houses, York-road.

Mansfield.—School, Chesterfield-road; Mr. T. R. Collinge, Surveyor, Town Hall, Mansfield.

Midsomer Norton.—Co-operative premises; Mr. E. F. Bird, architect, The Island, Midsomer, Norton; Mr. T. Foster, builder, Old Bath-hill, Radstock.

Mountain Ash. — School; Mr. W. H. Williams, Surveyor, Municipal Offices, Mountain Ash.

Newton Abbot.—Assembly hall for Mid-Devon Constitutional Club; Mr. F. E. Lloyd-Downes, architect, 36, Queen-street, Newton Abbot.

Northfleet.—Factory for Messrs. Henley's, Northfleet.

Portland.—Council offices; Messrs. Spier & Bevan, architects, Borough-chambers, Wharton-street, Cardiff.

Preston.—Sunday-school (1,500*l.*); Vicar, St. George's Church, Preston.

Reading.—Drill hall; Messrs. Hoare & Wheeler, architects, Friary-street, Reading.

St. Anne's.—Bank for Messrs. William & Deacon Banking Company, Ltd., St. Anne's-road; Mr. James Eaves, builder, 51, Booth Ley-road, Blackpool.

Seaford.—Block of shops, Clarmont-road; Mr. J. W. Hawkes, architect, Central-chambers, North-street Quadrant, Brighton.

Shaw.—Premises, Shaw Lodge Estate (800*l.*), for the Crompton Co-operative Society.

Sithney.—School (1,600*l.*); Mr. Jory, builder, Connor Downs.

Southwick-on-Wear.—Public hall, corner of Beaumont-street and The Green; Messrs. Joseph Potts & Son, builders, 57, John-street, Sunderland.

Steyning. — Board-room and offices for Guardians; Messrs. Clayton & Black, architects, 10, Prince Albert-street, Brighton.

Tunbridge Wells.—Residence; Mr. H. M. Caley, architect, 29, Mount-pleasant, Tunbridge Wells.

Twickenham.—The following plans have lodged:—Five houses, Hartington-road; alterations and additions to Thistleworth Park-road, for Messrs. Brewer, Smith, & Brewer; four houses, Whitton-road, for Mr. H. G. Alaway; alterations and additions, "The Nelson" Inn, Hampton-road, for Messrs. Nowell, Parr, & Kates; addition to motor-'bus garage, Cambridge-road, for the London General Omnibus Company, Ltd.

Wakefield.—Foundry, Phœnix Works, Calder Vale-road, for Messrs. W. Green & Son, Ltd., fuel economiser manufacturers.

Warley (near Brentwood).—Large residence; Mr. H. R. Bird, architect, St. Thomas's-gate, Brentwood.

Warrington.—Buildings for imbeciles and epileptics (12,666*l.*); Messrs. W. & J. Owen, architects, 4, Cairo-chambers, Warrington.

West Hartlepool.—School, Stratford-road; Managers, St. Joseph's Roman Catholic School, West Hartlepool.

West Oxford.—Schools; Mr. W. H. Castle, Estate Surveyor, Town Hall, Oxford.

Winchester.—Extensions and additions to Guildhall; Mr. W. V. Anderson, Surveyor, Town Hall, Winchester.

Winton.—Stables at depôt (863*l.*); Messrs. Jenkins & Sons, builders, 43, Holdenhurst-road, Porkesdown, Bournemouth.

Wombwell.—Baths (6,000*l.*); Mr. H. Burgess, architect, Queen Anne's-chambers, Westminster, S.W.

METROPOLITAN ASYLUMS BOARD.

AT the fortnightly sitting of the Metropolitan Asylums Board on Saturday communications were received from the Local Government Board assenting to the proposal to rebuild in permanent material two of the wards at Long Reach Hospital, and approving generally of the proposals to extend the verandahs of four of the double cottage blocks at Queen Mary's Hospital, but asking for complete plans and specifications before tenders are obtained.

Lightning Conductors.—Bearing on the Engineer's report *re* lightning conductors submitted at the last meeting, it was decided that the Works Committee be authorised to arrange for the repair and provision of lightning conductors at those institutions of the Board where necessary.

Sea Defences.—It was agreed to adopt the plan of Mr. H. Howard, Surveyor, of Littlehampton, for the erection of a concrete sea wall to protect the Board's property at Rustington. The estimated cost is 450*l.*

METROPOLITAN WATER BOARD.

AT the sitting of the Metropolitan Water Board last Friday the Finance Committee reported on the collection of the water rate for the last half-year. The report stated that the amount written off on account of "empties" was 61,726*l.*, or 5·38 per cent. This figure showed a satisfactory diminution on the past six half-years, there having been a continuous slight diminution each half-year from that ending September 30, 1909, when the percentage was 6·21. The amount received for building supplies during the half-year was 10,893*l.*

New Reservoirs.—The Board decided to proceed with the construction of two new reservoirs at Littleton for the supply of water on the north side of the Thames, as recommended at the last meeting. The estimated cost of the reservoirs are 1,646,400*l.* and 635,000*l.*, respectively, with a further 250,000*l.*, which will be spent during the first stage for connecting the reservoirs with existing mains.

Erection of Buildings.—The Works Committee reported that, in accordance with the power invested in them, they had accepted the offer of Messrs. Charles Wall, Ltd., of 14,817*l* 18s., for the erection of a pumping-station, gas-producer house, two cottages, and the formation of roads at the Chingford Reservoir Works. The buildings will be built with natural Portland stone dressings. They had also accepted the offer of Messrs. W. F. Blay, Ltd., of 2,168*l.* 16s. 9d., for the erection of an engine-house, cottage, etc., at Green Street Green.

PATENTS.

APPLICATIONS PUBLISHED.*

9,986 of 1911.—George Henry Pook: Fire-extinguishing sprinkler systems.

11,973 of 1911.—George Bull: Grab.

12,359 of 1911.—Johann Friedrich Meyer (J. F. Meyer): Building of walls and structures.

12,594 of 1911.—Frederick Dudley Bird: Apparatus for emptying cesspools and the like.

14,282 of 1911.—Frederick Mallott and Arthur James Mallott: Lifts or hoists.

14,506 of 1911.—Harold Clinton Ferree: Metal reinforcement for building purposes.

17,170 of 1911.—Tom Parker Whitehead; Rotary chimney-cowl.

21,370 of 1911.—Umiliano Panicali and Giovanni Brenni: Manufacture of ornamental tile slabs or the like.

22,687 of 1911.—John Parsons, jun.: Method and means for rendering walls of buildings and the like impervious to moisture.

25,088 of 1911.—Richard George Vaughan: Locking means for sash-fasteners.

25,485 of 1911.—Franz Hloch: Machines for pressing pasty masses, more particularly mixtures of asbestos and cement.

26,374 of 1911.—James Johnstone Frazer: Covering of walls, floors, ceilings, and other surfaces.

26,642 of 1911.—Wallace Lafayette Selleck: Locks.

26,737 of 1911.—Stefan von Mrokowski: Flooring for rooms and the like.

28,536 of 1911.—Guillaume Albert Amedée Ceulaers: Elastic or resilient cement.

28,927 of 1911.—Gerhard Schreiber: Portable moulding frames for making cement slabs.

1,285 of 1912.—Aktienbolaget Lux: Apparatus for lighting and extinguishing gas-fires from a distance.

3,372 of 1912.—Adolf Panzenhagen: Scaffolding.

7,544 of 1912.—Clarke Williams McKee: Gravity actuated window-locks.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

Adelphi Hotel, Liverpool: A Dining-Room, showing Inlet and Outlet Ventilation Gratings.

ADELPHI HOTEL, LIVERPOOL.—III.

(Continued from page 637.)

ENGINEERING EQUIPMENT.

In a large hotel building the engineering equipment is generally similar to that of a hospital or other public institution, although many of the fittings forming part of the several installations are necessarily of more elaborate and ornamental appearance.

When considering the equipment of the Adelphi Hotel the architect had to take into account something more than the requirements applying to the case of a public institution in order to comply with the desire of the Midland Railway Company that everything should be provided for the comfort of visitors without incurring such additional expenditure in running costs and maintenance as would entail disproportionate increase in the charges for accommodation.

Consequently, in selecting the machinery and apparatus for adoption, many points had to be considered all bearing upon the question of maximum efficiency, among them being the questions of first cost, value of space occupied, cost of running, attention required, depreciation, and maintenance charges.

Careful attention was also given in the designs to the installation of steam boilers, engines, and machinery in a situation where they would not constitute a source of possible annoyance to visitors. The system of heating and ventilation chosen is one obviating the familiar pipes and exposed radiators, and everything possible has been done to make engineering details as unobtrusive as possible in all parts of the building open to visitors.

The engineering plant and installations comprise steam boilers and their auxiliary appliances, generating sets, motor generators, switchboards, and other electrical apparatus, electric light and power systems, electric lifts, electric clocks, telephones, hot-water calorifiers, heating and ventilating plant, hot and cold water services, high-pressure water mains with hydrants and automatic sprinklers, vacuum cleaning plant and system of pipes, steam laundry machinery and apparatus, and an extensive installation of culinary plant.

The bulk of the work was executed by Messrs. Richard Crittall & Co., Ltd., of London; the electric light, power, and clock installations were entrusted to Messrs. Higgins & Griffiths, of London; and, as mentioned in our first article, the lifts were installed by the Otis Elevator Company, Ltd.

Boiler-house and Power Plant.

The steam boilers, electricity-generating machinery, calorifiers, and laundry machinery are situated in an independent building below ground level at the north side of the hotel, in order that the noise, vibration, and smell incidental to the operation of such plant shall not be communicated to the main building; but this department is readily accessible by means of connecting passages.

The boiler-house provides space for three water-tube boilers of the Stirling type, two of these having been laid down so far, each with the heating surface of 1,441 sq. ft. and capable of evaporating 7,000 lb. of steam per hour at the pressure of 160 lb. per square inch.

The boilers are fitted with automatic stokers of the Underfeed type, designed for using inexpensive fuel. Two electrically-driven fans provide the forced draught at a pressure of 2½ in. of water, and the products of combustion are conveyed from the boilers through a subterranean flue communicating with a steel chimney of 4 ft. 9 in. diameter carried above the roof of the hotel in one of the main ventilation shafts.

The Stirling boiler has upper steam and water drums connected to lower water drums by curved tubes placed transversely to the direction of the gases of combustion and situated favourably for dividing up the gases and abstracting heat from them. The boiler is completely surrounded by brickwork and suspended so as to provide for free expansion. The combustion-chamber is unusually large and fitted with baffles, causing the flames to pass up and down the various banks of tubes on their way to the main flue.

Coal-hoppers in connexion with the automatic stoking apparatus are fixed overhead in front of the boilers, at one side of which are feed pumps in duplicate, and near by the hot well and cast-iron pump for blowing-down purposes.

In the adjoining engine-room are three electricity-generating sets, each consisting of a three-throw quick revolution steam engine direct-coupled to a dynamo furnishing continuous current at 220 volts for lighting and power.

The whole of the exhaust steam from the engines and the various pumps can be utilised in the calorifiers for heating purposes and hot-water services, an automatic valve being provided so that the exhaust can escape direct to the atmosphere at times when there is a reduced demand for artificial heat and hot water.

An alternative arrangement makes it easy to supplement the exhaust steam by a supply of live steam from the boilers in case the former should be inadequate to provide sufficient heat at any time.

Calorifier and Pump-Room.

The heating and hot-water supply calorifiers are of the Royle type, with automatic regulating valves, and are arranged on the Crittall multiple series system.

Water circulating through the heating apparatus first passes through two calorifiers fitted with copper tube batteries connected with the exhaust steam main, and, providing a sufficient amount of steam is available, the water is there heated up to 150 deg. Fahr. It is next passed through another calorifier, also fitted with copper-tube battery, to which live steam is admitted as necessary by an automatic thermostatic valve.

This auxiliary battery comes into action whenever the supply of exhaust steam happens to be inadequate for raising the temperature of the water to the requisite limit of 150 deg. Fahr.

An electrically-driven pump is fitted in the main heating circuit to accelerate the circulation of water, this device having the effect of increasing the efficiency of the system and at the same time permitting the use of smaller pipes than would otherwise be requisite.

The hot-water supply calorifiers are similar to those for the heating system. Their heating capacity is equal to 5,000 gallons per hour, and to provide for the large quantities of water frequently drawn off by the simultaneous opening of numerous taps, these calorifiers are of the storage type, affording accommodation for 500 gallons of hot water as a reserve. The storage bodies, steam batteries, and circulation mains are of copper throughout.

In the calorifier-room is another electrically-driven pump, of the turbine type, capable of delivering 18,000 gallons of water per hour into the high-pressure fire mains against a vertical head of 180 ft. This pump is connected with the city water mains, and also with the cold-water storage tanks on the roof of the hotel, so that supplies of water shall be assured in the unlikely event of fire breaking out at any time when the city main may happen to be under repair.

The fire pump is fitted with an automatic device so arranged that immediately a hydrant valve is opened in any part of the hotel the pump is started, a bell is rung in the fireman's department, and a signal operates in the engineer's department.

Air Intakes and Conditioning Plant.

On the north side of the building is one of the two main air intakes for the warming and ventilation plant employed in the main apartments and terraces on the ground floor. Air is drawn in by way of a bricked well or area in the garden, the parapet of the well being screened by shrubs.

The incoming air is thoroughly washed, cleansed, and humidified in a "Carrier" air-conditioning plant, consisting of a galvanised-iron chamber, open at the inlet end and fitted with a special vertical screen at the outlet end. The bottom of the chamber is in the form of a shallow tank with ball valve overflow, and pipes are provided whence proceed numerous intersecting jets of water, forming a perfect water curtain through which the entering air must pass. Having been cleansed and humidified during its passage through the spray, the air enters the screen, which constitutes an efficient barrier to entrained particles of water.

In connexion with the air-conditioning plant are a hot-water battery and an electrically-driven fan.

A second plant of the same kind is installed on the opposite side of the hotel building.

The fans mentioned are of the multivane type, direct-coupled to powerful shunt-wound electric motors.

In cold weather the purified air is warmed by means of the hot-water batteries before entering the fans and passing thence into the main ducts. In warm weather the air is cooled before distribution.

Heating and Ventilation Systems.

The apparatus described forms part of the Crittall-balanced system of mechanical inlet and extraction ventilation which has been adopted for the French restaurant, grill-room, entrance hall, hypostyle hall, and the terraces around the fountain court.

From each fan a main duct conveys the purified and warmed, or cooled, air along the basement ceiling to the inlets in the various apartments.

At the base of each inlet is a relay heating battery, provided with an air valve, so arranged that all or any required proportion of the air can be passed over the battery before entering the apartment above. In this manner the temperature of the air can be regulated to a nicety, the valve also affording control over the volume of air admitted.

The warmed or cooled air is delivered into the rooms and other spaces by means of inlets designed as ornamental gratings, which harmonise with the general decorative treatment. Most of the gratings form part of the mouldings round arches and window-heads, and are quite unobtrusive. They possess the additional merit of distributing the incoming air in an effective manner without perceptible draught. Outlet gratings in the ceiling for vitiated air are placed at suitable points.

Air removed is conveyed through concealed ducts to two main ventilation shafts extending to the roof of the hotel, where each terminates at the casing of a powerful electrically-driven fan capable of moving 50,000 cubic ft. of air per minute.

The same fans deal with vitiated air from the kitchen department and service-rooms, the ducts being arranged so that the air from these parts of the building cannot gain admission to apartments used by visitors.

Apart from the absolute certainty of efficient ventilation ensured by this combination of the plenum and exhaust systems of mechanical ventilation, the system is distinctly worthy of notice by architects owing to the inconspicuous character of the air inlets and outlets.

All the rooms and corridors on the upper floors from the first to the fourth stories inclusive are warmed by Crittall's panel and floor border system of "invisible" heating.

The design of radiators has been greatly improved in recent years, and various methods have been introduced for casing radiators or heating pipes in an agreeable manner. For many classes of buildings one or other of these alternatives can be employed with general satisfaction, and for some buildings exposed radiators may be preferred for practical reasons.

In the case of private houses and residential buildings where well-diffused warmth is required continuously in cold weather without the visible presence of radiators, pipes, or open gratings, the system of invisible heating devised by Messrs. Crittall & Co. is certainly a thing to be desired. The warm panel absolutely conceals the heating pipes behind it, and the outer surface is finished in exactly the same style as the rest of the wall.

The warm floor border is similar in principle to the warm panel, and can be finished on the surface to match the flooring, or may be covered by carpet, linoleum, or any other material.

In the Adelphi Hotel a warm panel is placed under each window, and a narrow warm border is arranged along two sides of each room and near the walls of the corridors. The only visible indications of artificial warming apparatus are the handwheel of the valve controlling the supply of heat and a notice pointing out the position of the handwheel.

It may perhaps appear at first sight to some of our readers that the panel system cannot represent an efficient method of warming. The fact remains, however, that it is thoroughly satisfactory, and a little reflection will show that, apart from the heat radiated through the air and the heat communicated to the air by repeated contact with the warmed surfaces as the result of convection, the concealed pipes are placed so that they can most effectively perform the important duty of warming the materials of which the walls and floors are composed.

These parts of every building have always to be warmed, absorbing a very large proportion of the heat given off by heating apparatus of any kind, and until their temperature has been sufficiently raised the objects of the heating system can only be partially attained.

Therefore it will be seen that the principle of this panel system is theoretically correct, while in practice the panels and floor borders are found to diffuse a genial and well-distributed warmth, quite free from the oppressiveness perceptible in connexion with some methods of heating, and free from the unpleasant odour arising from the use of highly-heated pipes or radiators.

On the fifth and sixth floors of the hotel all the rooms are warmed by radiators, as the apartments in these two stories are of more simple character than those in the stories below them.

Hot and Cold Water Services and Fire Mains.

The hot and cold water services throughout the building were fitted by Messrs. Crittall & Co., and connected to the various sanitary fittings by Messrs. Davis, Bennett, & Co., as mentioned in our second article.

Cold water is stored in tanks situated in towers 15 ft. above roof level, the tanks being set back so that they will not be seen from the outside after the front portion of the hotel has been built. The tanks are of cast-iron, and have a storage capacity of about 10,000 gallons.

A service from the city main is laid on direct to the boiler-house, laundry, kitchen, and other parts of the lower floors, where large quantities of water are used, thereby reducing the necessity of pumping to a minimum.

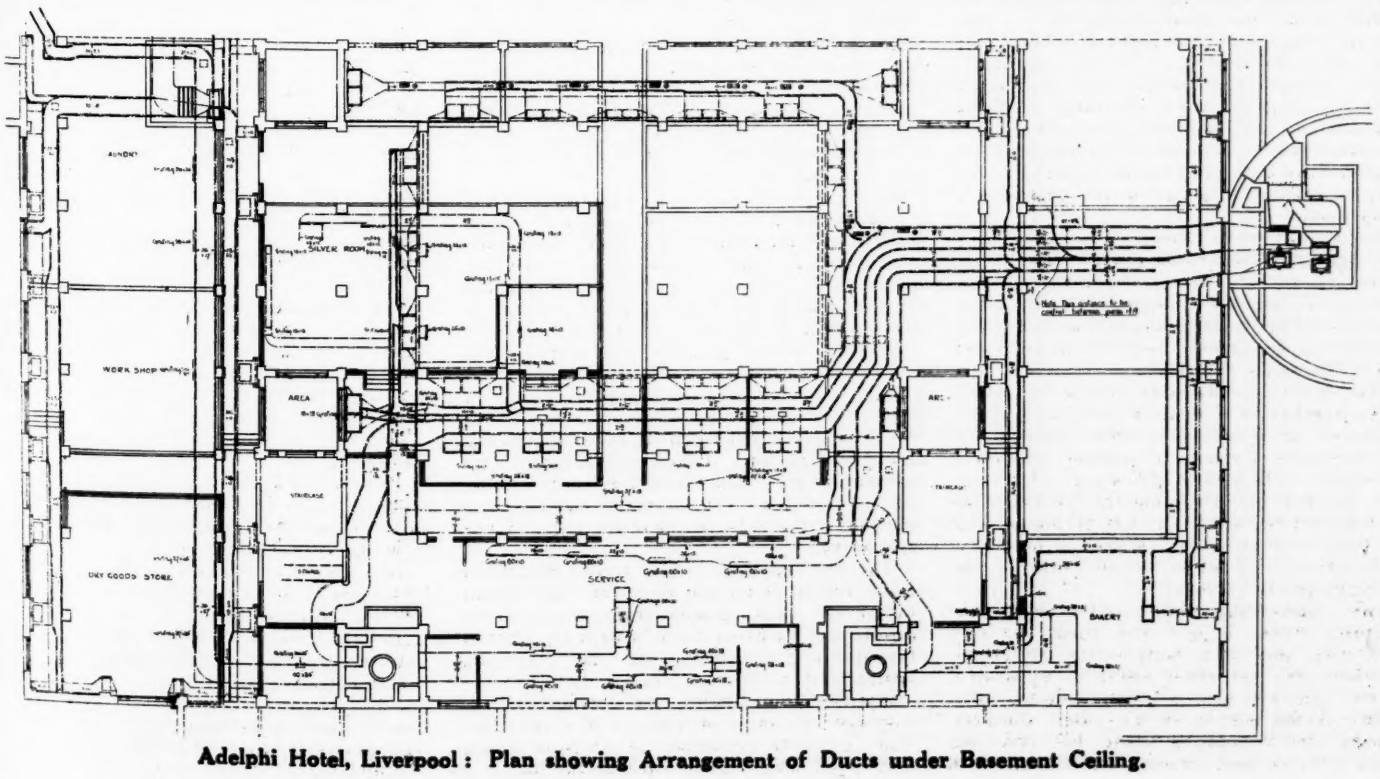
The high-pressure hydrant mains are carried to all parts of the building, and are connected with automatic sprinklers fixed over the service lifts and in places where inflammable materials are stored.

Neatly-finished hydrant cupboards, each with plate-glass door, are provided and fixed near the corner of every corridor, and contain a gun-metal hydrant valve with Midland Railway pattern instantaneous coupling, two lengths of canvas hose, branch pipe, and three automatic fire extinguishers.

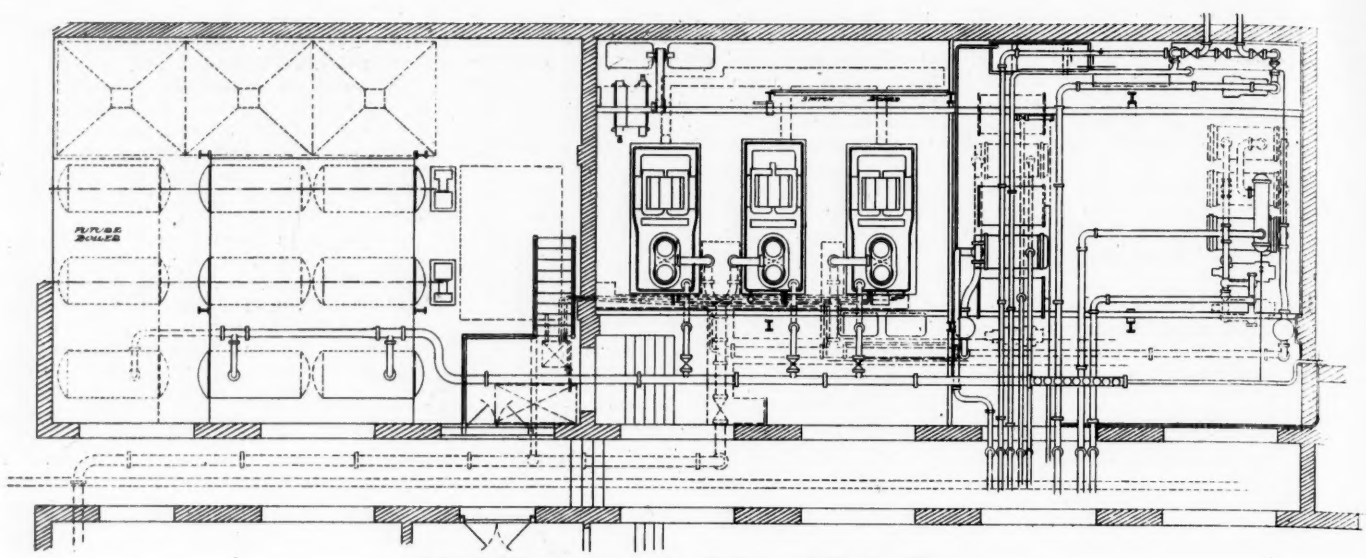
Vacuum-Cleaner Installation.

For the removal of dust from the hotel corridors and rooms a very complete installation of vacuum-cleaning plant has been provided. Rising mains are carried from the basement to the upper stories at numerous points, each riser being connected with a separate vacuum apparatus in order to permit a large number of rooms and corridors to be cleaned simultaneously. The service nozzles on the risers are fixed in the hydrant cupboards, the vacuum hose pipes being of length sufficient to command all the rooms situated between the various rising mains.

Dust entering the receiver of the vacuum plant is automatically mixed with water, and the resulting liquid flows into a detachable receptacle which is emptied at intervals. When inspecting the apparatus at work we asked why the outlet-pipe had not been connected with the drainage system of the hotel in order to obviate the periodical removal and emptying of the receptacles, and were informed that such connexions would be contrary to the regulations of the city authorities. In view of the fact that the discharge from the vacuum plant is quite liquid and contains less solid matter than street rain-water drains, and many domestic waste pipes, to say nothing of soil pipes, it is not easy to understand why the prohibition should exist. It may possibly have been framed some time ago to govern the disposal of trade wastes in Liverpool, but does not seem appropriate for application to vacuum-cleaner plant. While causing inconvenience to the occupants of buildings where the most approved method of cleaning has been adopted the regulation is probably quite inoperative in



Adelphi Hotel, Liverpool: Plan showing Arrangement of Ducts under Basement Ceiling.



Adelphi Hotel, Liverpool: Boiler and Engine Room.

other respects, inasmuch as there is little reason for doubting that the liquid discharge from vacuum apparatus usually finds its way into the drains after all.

Culinary Plant.

One of the most important installations in the hotel is that in the kitchen department. The kitchens are situated beneath the hypostyle hall and other apartments in its vicinity, and when the entire rebuilding project has been completed they will occupy a central position conducive to expeditious services to all parts of the building.

Large as the present kitchens are, they occupy only about two-thirds of the space that will be devoted to them after the front portion of the hotel has been reconstructed.

Consequently, the present kitchens may be regarded as being temporary in a sense. The apparatus has been laid down as far as possible to occupy the positions that will finally be allotted to them, but in cases where this proved impracticable the units were fixed in such manner as to permit them to be readily transferred to new positions.

A striking feature of the present equipment is a central independent range, 22 ft. long by 6 ft. 6 in. wide, with plate and casserole racks over the hot plate.

The range has six fires arranged on the Fourneau system, with a descending flue which passes beneath the floor to the chimney-shaft. It contains ten cooking-ovens and a double temperate oven or hot closet. The sides of the cooking-ovens are fitted with sliding radiancy screens permitting the contents of the ovens to be exposed to the full radiant heat from the firepots if desired.

The other apparatus comprises double coke grills, with hot closets above the fire, steam ovens for vegetables, puddings, and fish, fitted with capstan bolting device by which the doors can be hermetically sealed with one hand, steam-heated *bain maries* for sauce-making, gas-heated salamanders and stockpot stoves, steam-heated service tables in the kitchen and service-rooms, steam-heated pot-washing tanks and gas boiling tables and hot closets in the pastry-room.

The continuous water-boilers in the two still-rooms are fitted with automatic mercury controlling device. The boilers are arranged so that it is impossible for water to be drawn off until it has reached the boiling-point, and to prevent the water from becoming stale as the result of over-boiling the automatic control shuts off the gas immediately after fresh supplies of water have been brought to the boiling-point, the gas being automatically turned on whenever hot water is drawn off and replaced by cold water.

In the bakery are a brick-built oven for making Viennese bread and a Perkins steam tube oven for ordinary bread. These two ovens are capable of supplying the whole of the bread and rolls required in the hotel as well as a supplementary supply for restaurant cars on the railway if required.

The sinks for washing plates, cutlery, and silver are of teak throughout and arranged on the Staines system, the distinguishing feature of which is a series of weirs carrying away the surface water continuously during the process of washing up. Thus greasy matter floating on the surface are led away to the drains, keeping the water in the sinks free from grease, economising water and labour, and conducing to the better appearance of the articles cleansed.

Spacious refrigerator chambers, worked on the carbon dioxide principle, have been installed in the cold larder and wine service-rooms for the storage of meat and wines.

For the conveyance of messages from the kitchen to the larders and auxiliary offices generally a complete system of speaking tubes with megaphone attachments has been provided, while for the transmission of written orders from the service-rooms all over the hotel a system of brass gravity tubes has been installed. These tubes terminate in the kitchen in a position convenient for the clerical staff. An automatic ringing device and electrical indicator is operated immediately on the arrival of a message-carrier at its destination.

Considering its underground situation, the kitchen department of the hotel is wonderfully well lighted, a point for which the architect deserves credit.

Laundry Machinery and Plant.

In order to provide for the expeditious washing, ironing, and mending of visitors' and house linen, the hotel management have fitted a complete steam laundry in the vicinity of the power-house.

Owing to the limited space available, it was important to utilise every square foot to the greatest possible advantage by installing machinery giving a maximum output for a minimum amount of floor space, and by setting out the machinery and appliances so as to obviate wasted room.

After completion of the front portion of the building, the linen sorting and ironing rooms will be extended and a linen mending department will be added.

The whole of the machinery is electrically driven by means of current from the hotel generating plant, some of the machines being driven by means of belting and others direct from motors.

In the wash-house are two rotary washing-machines with the capacity of 350 shirts each, two 48-in. hydro-extractors of the under-driven type, and various accessories. The wastes from the machinery and apparatus are taken into white glazed fireclay channels covered with galvanised gratings laid in rebates.

Between the wash-house and ironing-room are two drying chambers with white glazed brick walls. Articles to be dried are suspended on overhead fixed rails, and are subjected to a blast of air blown through the room from a fan and steam-heater. The rooms are arranged so that one is in use while the other is being filled or emptied. An ingenious arrangement between the two doors provides for the admission of heated air into either room, but not into both rooms at the same time, and when either door is open the operating mechanism cannot be used, thus making it impossible for any thoughtless person to turn on the hot air while the chamber is in course of being charged or emptied.

Two Decoudun ironing-machines in the next room are capable of dealing with tablecloths, sheets, or other pieces of fabric of any length and up to 110 in. wide without folding, and in a second ironing-room an electrically-driven shirt-front ironer and a series of gas-irons are installed.

The department is completed by a large airing-room, with racks and steam coils, and a clean linen sorting-room.

Electric Light Installation.

The electric light and power installations were entrusted to Messrs. Higgins & Griffiths, of London, all the wiring being on the conduit system, and the bedroom switches designed to be flush with the panelling of the dressing-table, washstand, and wardrobe fixtures.

Osram metallic filament incandescent lamps are used throughout the hotel. These and most of the electroliers and lamp fittings have been manufactured by the General Electric Company, Ltd., of London.

All the electric light fittings were made in accordance with designs supplied by the architect. They comprise several massive electroliers in the hypostyle hall and terrace by Messrs. Singer & Sons, of Frome; fourteen sixteen-light cut crystal and ormolu electroliers in the entrance hall and French restaurant, fourteen eight-light neo-Greek electroliers in the grill-room, chased ormolu standards for dining tables, and a large number of smaller fittings, brackets, and pendants for staircases, corridors, and rooms, all these having been supplied by the General Electric Company.

Electric Clocks.

One specially ingenious application of electricity in the new building is represented by the installation of some two hundred electric clocks in the principal rooms, bedrooms, service-rooms, servants' quarters, and elsewhere. All the clocks keep uniform and accurate time, and are operated by one main controlling pendulum.

The dials are of the "Synchronome" impulse type, and with the exception of those in the staff departments are of Parisian enamel on copper. They were made by Messrs. Henri Picard & Freres, of Paris, and set in handsome brass cases, finished by hand by Messrs. Veritys, Ltd., of Birmingham, to the architect's design.

In view of the need for providing silently working clocks in bedrooms the manager of the Midlands Hotels Department had electric clocks of four different makes fitted in some of the rooms at the St. Pancras and Derby hotels, where they were carefully tested. Although none of these was absolutely silent, the "Synchronome" type was found to be the most satisfactory.

The dials are connected with the main controlling apparatus by wiring cicuits arranged in loops around the different floors, the ends being attached to a switchboard with devices for enabling any fault to be located without difficulty or delay.

The dials were supplied by the Synchronome Company, Ltd., of London, and installed by the electrical contractors.

DORKING PARISH CHURCH.

A faculty has been applied for to enlarge the side chapel of the Parish Church of Dorking. Plans have been prepared by Mr. Amian L. Champneys, son of Mr. Basil Champneys.

MURAL DECORATION.

On Tuesday evening, at the invitation of the Society of Painters in Tempera, a meeting of those interested in mural decoration was held at Crosby Hall, Chelsea, by permission of the Mural Exhibition Committee.

Sir Charles Holroyd,
who presided, welcomed such a large attendance, and expressed the hope that the exhibition was the beginning of a movement to enable them after some 200 years to produce something like mural decoration in England. They must not be cast down if they did not get a fine style in ten years, because they could only learn by experience. Nothing that had been done so far could really help them, but they had to find their own way of doing things, helped by the examples that had gone before them. Men coming from the art schools thoroughly trained should be made to decorate the many suitable buildings which they had in England. There were schools, in the first place, for young men to try their hands upon, and there were great buildings like the new County Council Hall, which was sure to have large waste spaces. Then there were the municipal offices and, above all, beautiful private houses with suitable places for decoration, which should be done for the space in which it was to be seen. Pictures were painted for the gallery, and he had often been disappointed when seeing them afterwards in private houses. By mural decoration people would be able to decorate their walls suitably. In the dark places they could make the paint sing a tune which would carry through that darkness, and in light places they could play more quietly and make the thing recede properly from the wall, and not, as pictures often appeared to do, to jump at one and stand out. By mural decoration he meant all methods of painting which had been invented. Even the despised oil painting served suitably for mural decoration. But fresco seemed to be the right method, and he believed that pure fresco would exist for a long time on the interior walls of cloisters of England.

Professor Selwyn Image
said the movement which had been initiated was a plain and forcible sign that what Matthew Arnold used to call the social idea was spreading amongst them in the matter of art as in other interests of life. He considered that in the past few years there had been too much pure consideration of picture painting as the highest form of art, but art was not a thing merely of private possession. It was a thing for the whole community, and the more they could spread it through the community the better for the community and the better for the art. He understood that the movement was raising enthusiasm and that there were many who were willing to put wall spaces at the disposal of artists and students for the purposes of decoration. They must remember, however, that the movement for a considerable time must remain in the nature of an experiment, and there would no doubt be a good many failures. He urged students, therefore, to put the highest ideals before them and strive to attain them, and he asked the critics to be generous. Students who had the opportunity of decorating a wall space should take up the work with the greatest seriousness, and in the subjects they chose and in the treatment of those subjects they should avoid extravagance and try to produce the finest work of which they were capable. They should think of the beautiful decoration which had been done in England in the old days by the simplest methods. The speaker discussed the decoration of schools and suggested they should not be too much influenced by the wishes of teachers and children. With regard to the opportunities for the decoration of wall spaces, he did not think students should be allowed to fly off like pigeons and alight on wall spaces. There were many accomplished artists capable of carrying out good design, and he thought these men should gather pupils around them to assist, but be themselves responsible for the design. In conclusion he suggested that the students who did the work should be adequately remunerated.

Mr. Walter Crane
said the last speaker had pointed out the lions in the path, but they wanted a little more audacity. They wanted to take their courage in both hands and go ahead. The suggestion with regard to the movement was that unsatisfactory works should be whitewashed over, and so students could go straight away feeling that they would not be a public annoyance. They spent public money in teaching decorators, and they ought to be able to find some work for them. He agreed that they did not want cheap labour, but the mural decorator could not expect the monetary reward as in the case of the painter of the easel picture which, owing to the tendency of the age, was made the subject of speculation. A picture in a room was a work of art not connected with the room itself, but mural decoration was not so. He agreed as to an artist being responsible for a design and calling in the assistance of pupils, as in the case of the old Italians, but at the same time he was not averse to free experiment on the part of the student, as it was the only way one could learn to do one's work. He considered the great appropriate subjects of mural decoration were of the more permanent symbolic kind, such as the ideas of Justice and Freedom and the great overshadowing figures of Fate and Time and Death.

Mr. J. E. Southall (Birmingham)
remarked that it might be objected that in the case of mural decoration there might very well be no future at all. They saw the new buildings of to-day being constructed of iron posts and girders with hardly anything worthy of the name of a wall in their composition. If in the future there were to be no walls, what was to become of mural decoration? Still, there was the incalculable force of instinct to be considered. Of all the doings of men through all the ages, the pictorial decoration of walls was the oldest, and the instinct which prompted their remotest ancestors to engrave and paint the sides of their caves would not be extirpated in a generation or two, and the time would surely come when they would find it both necessary and delightful to build good solid walls. English people made expensive journeys to see the mural decorations of Italy, but it never entered their minds to spend money on the decorations of the public buildings in this country. If only a small portion of the money spent on presentation portraits could be diverted to presentation frescoes, he believed the British public would begin to discover a new source of pleasure, while the relatives of those now being portrayed would experience a quite inexpressible sense of relief. Discussing the experiments made on the walls of the House of Lords, the speaker said the cause of the decay lay rather with the mistakes of the painters than in any inherent weakness in the process when rightly carried out, and he thought a careful weighing of the evidence did not justify them in saying that the atmosphere of London was fatal to true fresco indoors. If, however, this highest form of art was to flourish, it must be in a community with a lively sense of the common weal as its chief joy. Mr. Southall urged the necessity of there not being early failures in the movement through want of care or judgment on the part of the artists, and pointed out, amongst other things, the danger of concentrating attention upon aerial perspective and light and shade. If an architect lent them a wall they had no right to take it away and leave only a gap, however interesting the perspective seen through the gap. Light and shade were rather the special province of the sculptor, and the best frescoes told as masses of lovely colour. If they observed a proper regard for architecture, they might appeal to architects to give more consideration to painters and sculptors. If some of their architects would exercise more restraint and be a little more severe in style some of the money saved might go towards producing real live mural decoration.

Mr. A. J. Penty,
speaking from the point of view of the architect, said it seemed to him in the past there was some great impersonal force in society around which artists centred. In the Middle Ages the expression of art always centred round the Christian ideal. The difficulty in the revival of fresco at the present day was that they had no great subjects. He suggested that what they wanted was what he would term an artistic philosophy. They needed to fix their view on some particular period of the past, and he suggested the best would be that of Giotto and Cimabue. If they attempted to revive that period they could not do so, but the attempt would have a co-ordinating effect, and it would tend to promote a unity of method amongst those practising mural decoration.

The Chairman
agreed that if a style was to be chosen they should follow Giotto, for his frescoes were better than anybody's. The first great men who took up a method did all it could do. Rembrandt took up etching, and they all followed after, but it was all Rembrandt.

Mr. J. D. Crace
pointed out that in the finest period of Italian fresco work none of the artists thought it necessary to make their designs in quaint and archaic fashion. It seemed to be the impression amongst some of the artists in the exhibition that they should be stiff and archaic in the character of the figures or in the arrangement of the colouring. The great decorators of the past studied simplicity of design, and their designs were conceived in what might be called a diffused light. Above all, they never left their pictures unallied to the wall. Unless they blended their work into the building it was not decoration.

Mr. Halsey Ricardo urged that trained students did not get a chance. He agreed that the mural decoration of old times involved a general scheme in which a number of painters took part.

Mr. R. Hallward
expressed himself as amazed at the suggestion that artists should be left out and students introduced to do this work. The movement had begun upside down. It was suggested that students should do work which might be whitewashed over in a few years if it did not suit certain people, but would any self-respecting artist work on these terms? He considered there was a chance of great harm being done by the movement, and when they were told that the thing must be done this way or that way he heard the gods laugh.

Mr. Noel Heaton
said the failure of the House of Lords' frescoes made people believe that the climate of this country was not suitable for such work, but these and other failures were owing to the lack of sufficient technical knowledge on the part of the artists. Those who worked to gratify themselves as mural decorators should not think themselves above studying the composition of new grounds and their pigments and so forth.

It was announced that the exhibition will remain open till June 29, and that by request the loan portion will be sent to the Manchester Art Gallery after that date.

THE LONDON COUNTY COUNCIL.

The first weekly meeting after the Whitsun recess of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Lord Cheylesmore, Chairman, presiding.

The Chief Engineer.—Sir Maurice Fitzmaurice, C.M.G., has resigned his position as Chief Engineer to the Council, which position he has held since 1902. His resignation will take effect from December, when Sir Maurice intends to start a private practice.

Loans.—The Finance Committee recommended that loans be made to Borough Councils as follows:—Battersea, 1,980*l.* for drainage and kerbing; Hackney, 6,500*l.* for electricity undertaking; Poplar, 1,860*l.* for pipe sewer works; and the North Surrey School District Managers, 1,467*l.* for Poor Law purposes.

New County Hall.—In a report of the Establishment Committee it was stated that section A (central) and section C (north) of the superstructure of the new County Hall would be finished in 1915, and section B (south) in 1916.

Slum Area.—On a report of the Housing of the Working Classes Committee an amendment was moved by Mr. P. Harris that it should be referred to the Finance Committee to consider a report as to the submission of an estimate for the clearance of Brady-street, Bethnal Green, slum area, so that a scheme might be put in hand without delay. Sir A. Griffith-Boscawen pointed out that before the area referred to could be dealt with it would be necessary to formulate a scheme to carry it through the Council and to have an inquiry before the Local Government Board. It would, therefore, be impossible to spend any money on the area this year, and there was no necessity to increase the estimates. The amendment was rejected by fifty-eight votes to forty-eight.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. **Those with an asterisk (*) are advertised in this number:** Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xx.; Auction Sales, xxvi. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

Competitions.

JUNE 24.—**Reigate.**—CORPORATION FARMHOUSE.—Not to exceed 550*l.* Local architects only. Premium 10*l.* 10s. Particulars from the Town Clerk, Reigate.

JUNE 24. — **Wales.** — TWO SANATORIA. — The Executive Committee of the King Edward VII. Welsh National Memorial invite architects to submit sketches for two sanatoria, one in North and the other in South Wales. Accommodation, 150 and 250 beds respectively. See advertisement in the issue of May 31 for further particulars.

JUNE 26.—**Birmingham.**—BATHS.—Twenty and 10 guineas for second and third designs. Applications for conditions to be sent to the Superintendent Engineer, Kent-street, Birmingham.

JUNE 28. — **Hale, Cheshire.**—TOWN-PLANNING SCHEME.—Premiums 50*l.* and 25*l.* Particulars from the Council Offices, Hale. See issue of May 24 (page 601).

* JUNE 28.—**Regent's Quadrant.**—DESIGN FOR TREATMENT.—Premiums, 25 guineas, and 25 guineas divided. Adjudicators, Mr. W. Flockhart, Mr. E. A. Rickards, and Mr. Alan E. Munby. See advertisement in this issue for further particulars; also "Competition News," issue of April 19 (page 453), May 3 (page 512), May 10 (page 537).

JUNE 29.—**Reigate.**—LAYING-OUT AND DEVELOPING REIGATE LODGE ESTATE.—Premiums 30 guineas and 10 guineas. Particulars from the Town Clerk, Reigate.

JUNE 30.—**Padiham.**—TOWN HALL, BATHS, ETC.—Premiums 40*l.* and 20*l.* Particulars from Mr. J. Gregson, A.M.Inst.C.E., Surveyor's Office, Padiham.

JULY 1. — **Dusseldorf.** — A plan for the extension of the City of Dusseldorf. Premiums of 1,000*l.* to 875*l.* Conditions on application to the Chief Burgomaster, Dusseldorf. A translation appeared on page 365, September 29.

JULY 1.—**Port of London.**—NEW OFFICES.—Limited to those mentioned in "Competition News," issue of April 12 (page 424).

JULY 5. — **Conisbrough.** — ADDITIONS TO HOSPITAL.—The Doncaster and Mexbrough Joint Hospital Board invite competitive plans for additions to Isolation Hospital. See advertisements in the issues of May 17 and June 7 for further particulars.

AUGUST 6. — **Cardiff.** — FIRE-STATION. — The Cardiff Corporation invite designs and estimates for a fire brigade station in Westgate-street. Mr A. Marshall Mackenzie, assessor. Particulars from the Town Clerk, City Hall, Cardiff.

AUGUST 30. — SAXON SNELL PRIZE. — Fifty guineas, with medal, is offered for essay on "The Lighting, Heating, etc., of an Operating-Room for a General Hospital." Particulars from the Sanitary Institute, 90, Buckingham Palace-road, S.W.

SEPTEMBER 1.—**Goole.**—MUNICIPAL OFFICES.—Premiums 30*l.* and 15*l.* Particulars from Mr. R. Tyson, Council Offices, Goole.

SEPTEMBER 30.—**Dublin.**—UNIVERSITY COLLEGE: NEW BUILDINGS.—Limited to architects in Ireland. Assessor, Mr. H. T. Hare, F.R.I.B.A.

OCTOBER 1. — **Ottawa.** — MONUMENT TO KING EDWARD VII.—Sketch models in plaster to be sent to the Director of National Art Gallery, Ottawa.

NO DATE.—**Jordanhill, Glasgow.**—PROPOSED TRAINING COLLEGE.—Limited to six firms, named in "Competition News," December 1, page 635.

NO DATE. — **Warrington.** — SCHOOL. — The Warrington Education Committee invite competitive plans for the erection of a public elementary school. See advertisement in issue of February 16 for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

JUNE 21.—**Abergavenny.**—HOUSES.—For erection of a pair of houses in Wyndham-road, Abergavenny. Plans, specification, and particulars from Mr. B. J. Francis, architect, Abergavenny.

JUNE 21.—**Poole.**—SCHOOL.—Erection of an infants' elementary school at Courthill-road. Plans, specification, and conditions seen, and quantities, with forms of tender, on deposit of 5*l.*, with Mr. Samuel J. Newman, F.R.I.B.A., Borough Surveyor, Municipal-buildings, Market-street, Poole.

JUNE 22.—**Armagh.**—REPAIRS, ETC.—For carrying out structural repairs, painting, etc., to the savings bank premises, Armagh. Specification with Mr. H. C. Parkinson, architect, Russell-street, Armagh.

JUNE 22. — **Bradford.** — ALTERATIONS. — For alterations at the Technical College. Drawings and general conditions of contract seen, and quantities and form of tender from the City Architect, Town Hall, Bradford

JUNE 22. — **Halstead.**—REPAIRS.—For improvements and repairs to the Sturmer Council School. Plan and specification by Mr. F. Whitmore, County Architect, 54, Head-street, Halstead.

JUNE 22. — **Halstead.** — REPAIRS, ETC.—For repairs and painting to the Castle Hedingham Council School. Specification prepared by Mr. F. Whitmore, County Architect, 54, Head-street, Halstead.

JUNE 22.—**Teemore.**—HALL.—For building of a Temperance Hall at Teemore, Belturbet. Plan and specification by Mr. J. J. Bergin, C.E., A.S.G., Cavan. Mr. P. Clarke, Secretary to Building Committee, Drumanymore, Belturbet.

JUNE 24. — **Castlereggy.** — ALTERATIONS, ETC.—For alterations and improvements to dwelling-house at Castlereggy, Ballinamore, Co. Leitrim. Plans and specifications with Mr. P. J. Brady, C.E., architect, Broomfield House, Ballyhaise.

JUNE 24. — **Ely.** — NURSERY.—Erection of a nursery for infants at Headquarters Homes, Ely. Plans and specifications by architect, Mr. Edwin Seward, F.R.I.B.A., Queen's-chambers, Cardiff. Quantities on deposit of 2*l.* 2s.

JUNE 24. — **Ely.** — WALLS, ETC.—Erection of boundary walls and gateway around land at Ely. Plans and specifications with architect, Mr. Edwin Seward, F.R.I.B.A., Queen's-chambers, Cardiff.

JUNE 24.—**Haworth.**—ALTERATIONS.—For small alterations to Hillside House, Haworth. Drawings seen, and quantities from Messrs. Moore & Crabtree, architects, Town Hall-square, Keighley.

JUNE 24. — **Hingham.** — COTTAGES.—For three pairs of cottages at Hingham, Norfolk. Plans and specification with the architects, Messrs. A. F. Scott & Son, 24, Castle-meadow, Norwich, and 12, Holborn-hall, London, W.C.

JUNE 24. — **Holmfirth.** — HOUSES.—Erection of six dwelling-houses, Workhouse Farm, Holmfirth. Plans seen, and quantities from Messrs. Lunn & Kaye, architects and surveyors, Milnsbridge, and 14, John William-street, Huddersfield.

JUNE 24. — **Huddersfield.** — ADDITIONS.—For erection of additions and alterations to the restaurant, Buxton-road, for the Huddersfield Industrial Society, Ltd. Plans seen, and quantities from Messrs. J. Berry & Sons, architects and surveyors, 3, Market-place, Huddersfield.

JUNE 24.—**Leadgate.**—SHOPS, ETC.—For building business premises at Chopwell, for the Leadgate Industrial and Provident Society, Ltd. Plans and specifications at the general offices of the Society at Leadgate, Durham.

JUNE 24. — **Leeds.**—TANKS, ETC.—Construction of concrete tanks, water ways, weirs, etc., involving the construction of a temporary coffer dam, at the Generating Station, 1, Whitehall-road, Leeds. Form of agreement, specification, and form of tender from Mr. H. Dickinson, Manager, 1, Whitehall-road, Leeds.

JUNE 24. — **Tonyrefail.**—HOUSES.—Erection of twenty-four dwelling-houses for the Penygareg Building Club. Plans and specification with Messrs. Arthur Ll. Thomas & Gomer S. Morgan, architects and surveyors, Pontypridd.

JUNE 25. — **Cavan.** — ENLARGEMENT.—The Committee of the Killeshandra Co-operative Society, Ltd., Co. Cavan, is prepared to receive tenders for the rebuilding and enlarging of their offices and stores. Plan and specification at the office of the Society, Killeshandra.

JUNE 25. — **London.** — ALTERATIONS, ETC.—For alterations and external painting at Relief Station, Elder-road, West Norwood, S.E. Forms of tender from Mr. James L. Goldspink, Clerk to the Guardians, Guardians' Offices and Board-room, Brook-street, Kennington-road, S.E. Deposit of 2*l.* 2s.

JUNE 25. — **London.** — ADDITIONS, ETC.—For carrying out alterations and additions at the Queen's-road and Blackhorse-road Schools, Walthamstow. Plans and specifications seen, and forms of tender from Mr. H. Prosser, M.S.A., Architect to the Committee, Education Committee Offices, High-street, Walthamstow, N.E.

JUNE 25. — **Londonderry.**—HOUSES.—Erection of two almshouses in Bridge-street, Londonderry. Plans and specifications with Mr. John M. Robinson, architect, 7, Market-buildings, Strand, Londonderry.

JUNE 25.—**Manchester.**—CONVENIENCES.—Erection of conveniences, etc., at Lower Crumpsall Recreation Ground and at the Bowl House, Plymouth Grove Recreation Ground. Drawings seen, and specification from the City Architect, Town Hall, on deposit of 10s. 6d.

JUNE 25. — **Manchester.**—CONVENIENCES.—For the construction of public conveniences at Gorton Town Hall. Specification and quantities from the City Architect, Town Hall, on deposit of 1*l.* 1s.

JUNE 26.—**Aspatria.**—HOUSE.—For the erection of a dwelling-house, etc., at Outgang-road. Plans and specifications with Mr. J. Berwick, 17, Pringle, Aspatria.

JUNE 26. — **Edmonton.**—REPAIRS.—For repairs and painting works, etc., to the concert hall, staircases, entrance hall, at the Town Hall, Edmonton. Particulars and forms of tender from the Architect of the Council, Mr. H. W. Dobb, Town Hall, Edmonton.

JUNE 26. — **Knockbain.**—ADDITIONS, ETC.—For additions and alterations to Knockbain Schoolhouse. Plans and specifications seen, and quantities from Mr. Thos. Munro, architect, 62, Academy-street, Inverness.

JUNE 26.—**Neston.**—REPAIRS.—For repairs and alterations at property in Brook-street, Neston. Specification and tender from the Surveyor, Town Hall, Neston.

JUNE 26.—**Pettigo.**—ADDITIONS.—For additions to the Red Lion Hotel, Pettigo. Plans and specification with Mr. J. P. M'Grath, C.E., M.R.I.A.I., architect, 6, Castle-street, Derry.

JUNE 26.—**Rishworth.**—CONVENIENCES.—Erection of conveniences at Rishworth National School. Plans seen, and quantities from Messrs. Richard Horsfall & Son, 22A, Commercial-street, Halifax.

* JUNE 27. — **Balham.** — BRICK WALL.—The Wandsworth Guardians invite tenders for building a brick wall. See advertisement in this issue for further particulars.

JUNE 27. — **Southampton.**—SCHOOL.—Erection of a corrugated-iron temporary Council school at Bitterne. Plan, specification, and conditions of contract with Mr. A. L. Roberts, Architect to the Education Committee, The Castle, Winchester. Deposit of 2*l.* 2s.

JUNE 27. — **Winchester.**—PAVILION, ETC.—For erection of a lodge and convenience, pavilion, and bandstand at the new recreation ground. Plans and specification at the City Surveyor's Office, Guildhall, Winchester.

JUNE 28.—**Birstall.**—CONVENIENCES.—Erection of public sanitary conveniences, situate at the Smithies, Birstall. Plans, specifications, etc., seen, and particulars and forms of tender from Mr. T. H. Hailstone, the Surveyor to the Council, Council Offices, Birstall, near Leeds.

JUNE 28.—**Llancarvan.**—ROOM.—Erection of a church-room at Llancarvan. Plans and specification at the Vicarage, Llancarvan.

JUNE 28.—**Steeton.**—OFFICES, ETC.—Erection of new offices and workpeople's dining-room, etc., at the Bobbin Mills, Steeton. Plans seen, and quantities from Mr. James Hartley, architect, Skipton.

JUNE 28. — **Winchcomb.** — ADDITIONS.—For alterations and additions at the Winchcomb Workhouse Infirmary. Drawings and specification seen, and quantities and form of tender from the architects, Messrs. Phillott & George, architects and engineers, 31, Promenade, Cheltenham, on deposit of 2*l.* 2s.

JUNE 29. — **Aghina.** — SCHOOLS.—Erection of National schools at Aghina, near Macroom. Plans and specifications with Mr. Samuel F. Hynes, architect, 5, South-mall, Cork.

JUNE 29.—**St. Buryan.**—CLUB.—Erection of a Constitutional club at St. Buryan. Plans and specifications with Mr. O. Reginald Caldwell, architect, Penzance.

JULY 1.—**Clones.**—RESIDENCE.—For the erection of a private residence at Newtownbutler-road, Clones. Plans and specifications with Mr. P. J. Brady, C.E., architect, Broomfield House, Ballyhaise.

JULY 1. — **Hendon.**—MORTUARY, ETC.—Erection of a public mortuary and other buildings near the Council offices, etc. Drawings and specification seen, and forms of tender from Mr. S. Slater Grimley, M.Inst.C.E., Engineer and Surveyor to the Council, Council Offices, on deposit of 2*l.* 2s.

JULY 1 — **Hereford.** — HOUSE.—Erection of a house in connexion with the hospital. Plans, specification, and quantities, on deposit of 2*l.* 2s., from Messrs. Nicholson & Clarke, architects and surveyors, Cathedral-chambers, Hereford.

JULY 1. — **Heywood.** — SCHOOL.—Erection of school. Drawings and conditions with Mr. H. Cooper Anderson, A.R.I.B.A., M.S.A., architect and surveyor, 3, Longford-street, Heywood. Quantities on deposit of 3*l.* 3s.

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

JULY 1.—**Peterborough.**—EXTENSION.—Extension of Peterborough Post-office. Drawings, specification, and a copy of the conditions and form of contract at Peterborough Post-office. Quantities and forms of tender at H.M. Office of Works, Storey's-gate, London, S.W. Deposit of 1*l.* 1s.

JULY 1.—**Stratford-on-Avon.**—COTTAGES.—For the erection of workmen's cottages, in blocks of six, on land adjoining Birmingham-road. Plans and specifications seen, and quantities and form of tender, on deposit of 2*l.*, from Mr. Roden Dixon, Borough Surveyor, Municipal Offices, Stratford-upon-Avon.

JULY 1. — **Walbottle.** — HOUSES.—Erection of fifty-eight houses. Specification and drawings by the Surveyor to the Council, Mr. Thos. Gregory, Council Offices, Newburn.

JULY 2.—**Clare.**—FILTERS.—For the erection of No. 2 small sand filters, with necessary pipes and castings, to be erected on the reservoir site at Clare Plans and specifications seen at the Surveyor's Office, Ashen-road, Clare, and quantities and form of tender from the engineers, Messrs. Sands & Walker, Milton-chambers, Nottingham.

JULY 2.—**Liverton.**—ALTERATIONS.—Alterations and improvements at the Liverton Mines Council School. Plans and specification and forms of tender from Mr. J. C. Wrigley, Secretary, Education Offices, Northallerton.

JULY 2. — **Manchester.** — WARDS.—Erection of new lunatic wards and drainage at the Withington Workhouse. Plans seen, and quantities from Mr. Fredk. H Overmann, F.M.S.A., 48, Kingstreet, Manchester. Deposit of 1*l.* 1s.

JULY 2.—**Mountain Ash.**—ALTERATIONS.—For extensive alterations, etc., to the Duffryn Boys' School, Mountain Ash. Plans and specifications seen, and forms of tender from the architect, Mr. W. H. Williams, M.S.A., Town Hall, Mountain Ash.

JULY 3.—**Aylesbury.**—EXTENSION.—For the extension of Aylesbury Post-office. Drawings, specification, and a copy of the conditions and form of contract at the Aylesbury Post-office. Quantities and forms of tender at H.M. Office of Works, Storey's-gate, London, S.W. Deposit of 1*l.* 1s.

✱ JULY 3.—**Stepney.**—BACTERIOLOGICAL LABORATORY.—The Stepney B.C. invite tenders for the erection of a bacteriological laboratory at White Horse-street, Stepney. See advertisement in this issue for further particulars.

JULY 4.—**Banstead.**—ROOM.—For building a manual training room at school, Banstead, Surrey. Specification, form of tender, and drawing from architect. Mr. Cecil A. Sharp, 2, Verulam-buildings, Gray's Inn, W.C., on deposit of 5*l.*

JULY 4.—**Garnant.**—SCHOOL.—For building a new school at Garnant, Amman Valley. Plans and specifications seen, and particulars from Mr. W. V. Morgan, A.R.I.B.A., County Architect, County Education Offices, Carmarthen.

JULY 4.—**Penge.**—STAIRCASE.—For erection of an outside staircase at the Melvin-road Council School, Penge. Specifications and forms of tender from the Surveyor to the Committee, Mr. H. W. Longdin, Town Hall, Anerley, S.E. Deposit of 1*l.* 1s.

JULY 5. — **Airton.** — SCHOOL.—For erection of Airton new school. Plans seen, and specifications with quantities from the Education Architect, County Hall, Wakefield. Deposit of 1*l.*

JULY 5.—**Bedford.**—EXTENSION.—For the extension of Bedford Post-office. Drawings, specification, and a copy of the conditions and form of contract at Bedford Post-office. Quantities and forms of tender at H.M. Office of Works, Storey's-gate, London, S.W., on deposit of 1*l.* 1s.

JULY 5. — **Peterborough.** — ADDITIONS.—For additions and alterations to the infirmary of the Peterborough Union Workhouse. Messrs. Townsend & Fordham, architects, Cross-street, Peterborough.

JULY 5.—**Rothwell Carlton.**—ADDITIONS.—For additions to the Rothwell Carlton Council School. Plans seen, and specifications with quantities from the Education Architect, County Hall, Wakefield.

JULY 5.—**Sicklinghall.**—SCHOOL.—For erection of Sicklinghall new school. Plans seen, and specifications with quantities from the Education Architect, County Hall, Wakefield. Deposit of 1*l.*

JULY 6.—**Brighouse.**—BATHS.—Erection of proposed Public Baths in Mill Royd-street, Brighouse. Plans seen, and specifications, quantities, and forms of tender from Mr. S. F. Haywood, Borough Engineer, Municipal Offices, Brighouse, on deposit of 1*l.* 1s.

✱ JULY 6.—**Chalfont St. Peter.**—SCHOOL.—The Managers of Chalfont St. Peter's Schools invite tenders for new boys' schools. See advertisement in this issue for further particulars.

JULY 6.—**Folkestone.**—HOUSE.—For the erection of a house, lodge, stables, etc., on the "Acrise" Estate, near Folkestone. Quantities from the architect, Mr. Henry F. Mence, St. Peter's-street, St. Albans. Deposit of 2*l.* 2s.

JULY 8. — **Stowmarket.** — SCHOOLS.—For the erection of new public elementary schools at Stowmarket and Fakefield. Quantities and forms of tender from Mr. J. Webb, the Committee's Surveyor, Education Office, County Hall, Ipswich. Deposit of 1*l.* 1s.

JULY 9.—**Barking.**—DWELLINGS.—For the erection of twenty-six workmen's dwellings at Boundary-road. Plans and specification seen, and form of tender from the Council's Architect, Mr. C. J. Dawson, F.R.I.B.A., 16, Cambridge-road, Barking.

✱ JULY 10.—**Lichfield.**—SUB-POST-OFFICE.—The Commissioners of H.M. Works and Public Buildings invite tenders for Whittington Barracks Sub-Post-office, Lichfield. See advertisement in this issue for further particulars.

✱ JULY 10. — **London, W.C.** — ALTERATIONS TO MORTUARY.—The Holborn B.C. invite tenders for alterations to the public mortuary in Goldsmith-street. See advertisement in this issue for further particulars.

✱ JULY 11. — **Homerton.** — BRANCH LIBRARY.—The Hackney B.C. invite tenders for erection of a branch library. See advertisement in this issue for further particulars.

✱ JULY 11.—**Stanford.**—POST-OFFICE.—The Commissioners of H.M. Works, etc., invite tenders for erection of Stafford new Head Post-office. See advertisement in this issue for further particulars.

JULY 13.—**Bucharest.**—PORT CONSTRUCTION.—Tenders invited at the direction of Ports and River Communications, Bucharest, for the prolongation of the lower platform of the Port of Calafat.

JULY 16.—**London.**—OFFICES.—For the extension of the new Public Offices, Westminster (superstructure). Drawings, specification, and conditions and form of contract with Sir Henry Tanner, H.M. Office of Works, etc., Storey's-gate, London, S.W. Quantities on deposit of 1*l.* 1s.

NO DATE.—**Appleby.**—CLUB, ETC.—For erection of Conservative club and post-office, Appleby, Westmorland. Mr. R. Morton Rigg, Lic R.I.B.A., M.S.A., architect, Penrith.

NO DATE.—**Buckley.**—ROOMS.—For the erection of a classroom, cloakrooms, etc., at the Bistre C.E. School, Buckley. Quantities, on deposit of 1*l.* 1s., from Mr. F. A. Roberts, M.S.A., architect and surveyor, Earl-chambers, Mold.

✱ NO DATE.—**Durham.**—TEMPORARY SCHOOL.—The Durham Education Committee invite tenders for a temporary school for 250 scholars at West Stanley. See advertisement in this issue for further particulars.

NO DATE. — **Falmouth.**—VILLAS.—For erection of a pair of semi-detached villas in Melville-road. Particulars from Mr. A. E. Lewis, Tremenheere, Gyllyngvase-road, Falmouth.

NO DATE.—**Longwood.**—HOUSES, ETC.—For the erection of eleven dwelling-houses and shop, Raw Nook-road, Salendine Nook, for the Longwood Industrial Society. Plans seen, and quantities with Mr. Sanderson M. Balmford, architect, Longwood.

NO DATE.—**St. Austell.**—TANKS, ETC.—Erection of a new clay dry, tanks, etc., at the New Halwyn Works, Retew, Grampound-road. Particulars from Mr. A. J. Perry, Secretary, New Halwyn China Clay Company, Ltd., St. Austell.

NO DATE. — **Swaffham.**—ADDITIONS.—For proposed alterations and additions to Hamond's Grammar School. Messrs. Lacey & Upcher, architects and surveyors, 6, Upper King-street, Norwich. Quantities on deposit of 1*l.* 1s.

ENGINEERING, IRON, AND STEEL.

JUNE 22.—**Lydd.**—SEA WALL.—For the lengthening of the sea wall at the east end. Particulars of Mr. J. Russell, Expenditor, Mill House, Lydd, Kent.

JUNE 24. — **Bucharest.**—BRIDGE.—Tenders invited at Ministry of Public Works, Bucharest, for the construction of a bridge on the Argesh.

JUNE 24.—**Leeds.**—TANKS.—For the construction of concrete tanks, waterways, weirs, etc., at the generating station, 1, Whitehall-road, Leeds. Specification, conditions of contract, and form of tender at 1, Whitehall-road, Leeds

JUNE 26.—**Kingston-on-Thames.**—ADDITIONS.—For an addition to the electricity works building and for engine foundations. Plans and specification with the Borough Surveyor, Mr. R. Hampton Clucas, Municipal Offices.

JULY 4.—**Dewsbury.**—PLANT.—For the supply of one 1,000-kw. turbine, two 500-kw. direct-current generators, jet-condensing plant. Specifications, with form of contract, from Mr. R. H. Campion, Borough Electrical Engineer, Bradford-road, Dewsbury, on deposit of 1*l.* 1s.

JULY 24. — **London.** — PLANT.—The Islington Lighting Committee invite tenders for 3,000-kw. steam turbine alternator, exciter, condensing plant, switchgear, circulating and steam piping, with other accessories. Specification, general conditions, and form of tender from the Electrical Engineer, 50, Eden-grove, Holloway, London, N Deposit of 2*l.* 2s.

FURNITURE, PAINTING, MATERIALS, etc.

JUNE 22.—**Oswestry.**—PAINTING.—For painting and decorating at the Guildhall. Specification and general conditions from the Engineer and Surveyor, Guildhall, Oswestry.

JUNE 24. — **Ipswich.** — PAINTING.—For outside painting and for inside colouring, painting and varnishing, etc., of schools, etc., in the borough. Particulars and specifications from the Committee's Surveyor, Mr. E. T. Johns, 8, Lower Brook-street, Ipswich.

JUNE 24. — **Rochdale.** — PAINTING.—For the painting of the waiting-room, offices, and shelters in the town centre. Specification and form of tender from the General Manager, Tramway Offices, Mellor-street, Rochdale, on deposit of 5s.

JUNE 24. — **Sheffield.**—RAILS.—For the supply of 750 tons of steel tram rails. Specification and drawings, with form of tender and conditions of contract, from Mr. W. J. Hadfield, Surveyor of Highways, Town Hall, Sheffield. Deposit of 1*l.* 1s.

JUNE 25.—**Bingley.**—PAINTING.—For painting, colourwashing, etc., at Bingley, Mornington-road, and Cullingworth Joint Council schools. Specifications from Mr. B. Leah, Education Office, Bingley.

✱ JUNE 25. — **Lambeth.** — PAINTING, ETC.—The Lambeth Guardians invite tenders for alteration and painting at the office and relief station. See advertisement in this issue for further particulars.

JUNE 26.—**Andover.**—PAINTING.—For painting and repairs at the free library buildings, Bridge-street. Specification at the Borough Surveyor's Office.

JUNE 26.—**Buckland.**—PAINTING.—For the outside painting of the buildings belonging to the Workhouse. Specifications and conditions from Mr. Eugene Carder, Clerk, 17, Market-square, Dover.

✱ JUNE 26.—**London, S.E.**—CLEANSING, WHITEWASHING, ETC.—The Bermondsey Guardians invite tenders for cleansing, whitewashing, and distempering at Infirmary, Lower-road, Rotherhithe, S.E. See advertisement in this issue for further particulars.

JUNE 28. — **Stockport.**—PAINTING.—For painting and decorating the Central and Reddish fire-stations, etc. Conditions of contract seen, and specification, with form of tender, from Mr. J. Atkinson, A.M.Inst.C.E., Borough Surveyor, Town Hall, Stockport.

JULY 1. — **Blackburn.** — PAINTING.—For the painting, etc., at various schools in the borough. Mr. William Stubbs, A.M.Inst.C.E., Borough Engineer, Municipal Offices, Blackburn.

✱ JULY 1.—**London.**—PAINTING, ETC.—The Board of Management of the Central London Sick Asylum District invite tenders for painting and general repairs, etc., at the Cleveland-street and Hendon Asylums. See advertisement in this issue for further particulars.

✱ JULY 2. — **Eastern Counties.**—PETROL LORRIES.—Tenders are invited for hiring petrol lorries for work in connexion with the Army manœuvres. See advertisement in this issue for further particulars.

✱ JULY 3. — **Chelsea.** — PAINTING, ETC.—The Chelsea B.C. invite tenders for cleaning and painting outside of the Town Hall. See advertisement in this issue for further particulars.

✱ JULY 3.—**Essex and Kent.**—PAINTING, ETC.—The Metropolitan Asylums Board invite separate tenders for cleaning and painting at the Bridge Industrial Home, Witham, Essex, and White Oak School, Swanley Junction. See advertisement in this issue for further particulars.

✱ JULY 4.—**Kensington.**—PAINTING, ETC.—The Kensington Guardians invite tenders for cleaning and painting work at Infirmary, Marloes-road, W. See advertisement in this issue for further particulars.

✱ JULY 9.—**Walthamstow.**—PAINTING, ETC.—The Walthamstow Education Committee invite tenders for painting, colouring, etc., at various schools. See advertisement in this issue for further particulars.

✱ JULY 17.—**Tottenham.**—DEMOLISHING BUILDINGS.—The Metropolitan Asylums Board invite tenders for demolishing boiler-house, chimney-shaft, and other buildings. See advertisement in this issue for further particulars.

ROADS, SANITARY AND WATER WORKS.

JUNE 22.—**Cockermouth.**—KERBING.—For kerbing and channelling footpath at Flimby. Particulars from Mr. S. K. Gibson, Highway Surveyor, Grecian Villa, Cockermouth.

JUNE 22. — **Radcliffe.**—SEWAGE.—For sewering Bolton-street, between Water-street and Holly Bank-street. Plans and specifications seen, and form of tender from the Surveyor, Council Offices, Radcliffe.

JUNE 24. — **Brighouse.** — PAVING. — For the paving of a portion of road, from the bottom of Bonegate-road to Cross-street, with granite setts on concrete. Plans and sections seen, and specifications and quantities from Mr. S. S. Haywood, Borough Engineer and Surveyor, Municipal Offices, Brighouse. Deposit of 1*l.* 1s.

JUNE 24.—**Denton.**—SEWER.—For construction of about 1,260 yds. of 12-in. stoneware pipe sewer in Thornley-lane, Denton. Drawings and specifications seen, and form of tender from the Surveyor to the Council, Town Hall, Denton, near Manchester. Deposit of 1*l.* 1s

JUNE 24. — **South Stoneham.** — SEWAGE.—For the main sewerage and sewage disposal works at Bitterne Manor, Southampton. Plans and quantities with Messrs. Weston & Burnett, engineers, 24, Portland-street, Southampton. Deposit of 3*l.* 3s.

JUNE 25.—**Maybole.**—SEWAGE.—Construction of new sewers, sewage tanks, etc., and alterations on existing works. Drawings with Messrs. Gilbert Thomson & Ferguson, civil engineers, 164, Bath-street, Glasgow. Specification and schedule on deposit of 2*l.* 2s.

JUNE 25.—**West Hartlepool.**—ROAD.—For the construction of roadway from bridge at Burn Valley-gardens to Blakelock-road; Back Topcliffe and Brafferton-street, and Back Topcliffe and Harcourt-street. Plans and specifications seen, and forms of tender with quantities from Mr. Nelson F. Dennis, M.Inst.C.E., Borough Engineer and Surveyor, West Hartlepool.

JUNE 26. — **Belfast.** — SETTS.—For supply of about 400 tons of setts. Specification, form of tender, and information from the Harbour Engineer, Mr. W. R. Kelly, M.Inst.C.E.

JUNE 26. — **Beverley.** — STREETS.—For private street works in Waltham-lane. Drawings and specifications seen, and quantities with forms of tender from Mr. J. Gould Smith, A.M.Inst.C.E., Borough Surveyor, 31, Lairgate, Beverley.

JUNE 26.—**Middlesbrough.**—STREETS.—For the reconstruction and making-up of the back street between Cunningham and Archibald streets with slag scoriæ paving. Plans and specification seen, and quantities at the Borough Engineer's Office, Municipal Buildings.

JUNE 27.—**Greenwich.**—SEWER.—For the construction of a length of 500 ft. of 2-ft. diameter stoneware pipe sewer from Delafield-road to Woolwich-road, Charlton. Drawings, specification, and form of tender from the Borough Engineer and Surveyor, Town Hall, Greenwich-road, S.E

ROADS, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

JUNE 29.—**Harrow-on-the-Hill.**—GRANITE.—For supply of broken granite and ¾-in. granite chippings, and coarse and fine gravel. Mr. J. Percy Bennetts, Surveyor to the Council, Harrow.

JULY 1.—**Romford.**—SEWAGE, ETC.—For works of road improvement and laying of sewers. Plan seen, and specifications, quantities, and forms of tender from Mr. Herbert T. Ridge, at the Council Offices, Market-place, Romford, on deposit of 2*l.* 2s.

JULY 2. — **Paulton.** — KERBING.—For laying about 150 yds. run of kerbing and channelling and about 150 super. yds. of asphalting at Alexandra-terrace. Particulars from the Surveyor, The Grange, Hallatrow, near Bristol.

JULY 2. — **Woodford.** — TANKS, ETC.—Construction of detritus tanks, percolating filters, humus tanks, etc. Form of tender, quantities, etc., on deposit of 2*l.* 2s., from Mr. William Farrington, Engineer and Surveyor to the Council, Council Offices, Woodford Green, Essex.

✱ JULY 3. — **Dartford.**—TAR PAVING. — The Metropolitan Asylums Board invite tenders for repairs to tar paving at Darenth Industrial Colony, Dartford, Kent. See advertisement in this issue for further particulars.

✱ JULY 3.—**Dartford.**—TERRAZZO PAVING.—The Metropolitan Asylums Board invite tenders for repairs to terrazzo paving at Joyce Green Smallpox Hospital, Dartford, Kent. See advertisement in this issue for further particulars.

✱ JULY 3. — **Fulham and Sutton.**—ROAD AND PAVING REPAIRS. — The Metropolitan Asylums Board invite tenders for road and paving repairs at (1) the Fever Hospital, Fulham; (2) the Downs School, Sutton, Surrey See advertisement in this issue for further particulars.

JULY 3.—**Goole.**—STREET.—For the making-up of Humber-street. Plans seen, specification, forms of tender, and quantities from Mr. C. G. Bradley, C.E., Council Offices, Goole, on deposit of 1*l.* 1s.

JULY 3. — **Hove.** — SEWAGE.—For constructing new sewers in Queen's-gardens, Grand-avenue, The Drive, Holland-road, and Davigdor-road. Plans, specification, and form of contract seen, and quantities and form of tender from the Borough Surveyor, Mr. Hugh Hamilton Scott. Deposit of 2*l.* 2s.

JULY 4.—**Lynn.**—WORKS.—For the construction of outfall works, and laying of stoneware pipe sewers, the construction of about 100 manholes, canal crossing, and adjunct works. Plans seen with the Engineer, Mr. W. M. Beckett, A.M.Inst.C.E., 33, Brazennose-street, Manchester. Specification, quantities, and form of tender on deposit of 3*l.* 3s.

JULY 9. — **Fakenham.**—SEWAGE.—For the construction of new sewerage and sewage disposal works. Plans seen, and conditions of contract, specifications, quantities, and forms of tender, on deposit of 5*l.*, from the Council's Engineer, Mr. E. J. Silcock, M.Inst.C.E., Sanctuary House, Tothill-street, Westminster, and 10, Park-row, Leeds.

JULY 10. — **Seisdon.** — SEWAGE.—For the construction of sedimentation tanks, filters, and other works at the sewage outfall site at Whittington. Plans and drawings seen, and specification, quantities, and form of tender from Mr. William Fiddian, civil engineer, Stourbridge, on deposit of 3*l.* 3s.

NO DATE.—**Gomersal.**—STREETS.—For the work of footpath renewals on the Holme-lane End and Heckmondwike main road, from Dewsbury-road Top, southwards. Mr. Ben Hinchliffe, M.Inst.Mun.E., Engineer and Surveyor, Surveyor's Office, Mechanics' Institute, Gomersal.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*SURVEYOR	Diocese of London	Not stated	July 1

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*BUILDERS' MERCHANT'S STOCK—At 42, Jewry-street, Winchester	H. W. Smith	June 25
*PLANT AND MACHINERY.—On the Site	Craske & Sons	June 26
*DEALS, BATTENS, BOARDS, TIMBER, ETC.—Great Hall, Winchester House, E.C.	Churchill & Sim	June 26
*BUILDING MATERIALS, STOCKWELL, S.W.—On the Site	Hooker & Webb	June 26
*BUILDING MATERIALS—On the Premises	Bowditch & Grant	June 27
*BUILDING MATERIALS, CAMBERWELL-GATE, S.E.—On the Site	Veryard & Yates	June 27
*FREEHOLD MANUFACTURING PROPERTY, ETC., DORSET—Dolphin Hotel, S'hampton	Joshua Baker, Cooke, & Standen	July 4
*FREEHOLD PROPERTY—At the Mart	Rutley, Son, & Vine	July 9
*FREEHOLD PROPERTY, CURZON-STREET—At the Mart	Winkworth & Co.	July 10
*FREEHOLD BUILDING SITES, PURLEY—Greyhound Hotel, Croydon	Finlay Hill	July 11
*FREEHOLD BUILDING PLOTS, EAST SHEEN—Greyhound Hotel, Richmond	Farebrother, Ellis, & Co.	July 12
*FREEHOLD BUILDING ESTATE, WINCHMORE HILL—At the Mart	S. Walker & Sons	July 16

LONDON COUNCILS.

Bermondsey.—Plans lodged by Mr. W. G. R. Sprague, architect, Criterion-chambers, Jermyn-street, W., have been approved for the erection of a cinematograph hall on the site of No. 57, Lower-road, Rotherhithe.

Croydon.—Various alterations and improvements are to be carried out at South Norwood School at a cost not to exceed 1,060*l.* Mr. H. Carter Pegg has been appointed architect for the enlargement on the Ecclesbourne-road Schools at a remuneration of 4 per cent. of the contract price. The tenders of Messrs. W. Smith & Sons and Messrs. G. E. Everitt & Sons, both of Croydon, have been accepted at 14,493*l.* and 920*l.* for the erection of the Borough School and a handicraft centre at Boston-road School, respectively.

Friern Barnet.—Plans have been passed for Mr. H. E. Stacey to erect eighteen houses in Athenæum-road and Oakleigh-gardens.

Hemel Hempstead.—Mr. H. G. Darer has had plans passed permitting him to erect a cinematograph hall in London-road.

Marylebone.—A portion of the carriageway of Wellington-road is to be recoated and tar-sprayed at an estimated cost of 210*l.* Plans have been lodged with the London County Council by Messrs. Boehmer & Gibbs for the erection of an hotel on the site of No. 152, Oxford-street. Messrs. Gale, Durlacher, & Emmett, 15, New Bridge-street, E.C., have also lodged plans with the Central Authority for the erection of a cinematograph theatre in Marylebone-road.

Richmond.—The tender of Messrs. R. Clayden, Ltd., Richmond, at 283*l.* 7s. 9d., has been accepted for certain repair works to the Council's workmen's dwellings.

Stepney.—Electricity mains are to be extended in two streets. The General Purposes Committee have decided to proceed with the work of erecting a bacteriological laboratory at the Public Health Offices, for which tenders will be invited, subject to the usual sanction.

Wimbledon.—The Town-Planning Committee have instructed the Borough Surveyor to prepare plans showing lands available for building in the Borough not yet built upon. Plans have been passed for Mr. R. C. T. Gordon for the erection of twenty houses in Ravensbury and Acuba roads.

OBITUARY.

Mr. H. J. Williams.

The death, on June 7, at his residence, Eagle House, Brislington, is announced of Mr. Henry Joseph Williams, of Alliance-chambers, Corn-street, Bristol, in his seventy-first year. Mr. Williams had an extensive practice in Bristol, his native city, where he began his career as an architect more than forty years ago. He was one of the fourteen architects who were invited twelve years since to submit designs for the new Bristol Infirmary, for 1,000 patients; he was employed in the repair and resoration of several churches, comprising, as we gather, the underpinning of the north side of Ripon Cathedral. Of his other work in the locality we may mention the Law Union and Crown Insurance offices in Clare-street (1897); Avonbank electricity works in Feeder-road (1900-1); Petty Sessional and police courts, Nelson and Bridewell streets, rebuilding and extension (1901-2), in competition; the new Stock Exchange, with offices and library, in Nicholas-street; and the Waterworks Company's offices in Telephone-avenue (1902-3); Council School, Parson-street, Bedminster, for 1,050 scholars; the Bristol Wagon and Carriage Works Company's workshops and garage in Victoria-street; London and South-Western Bank, and the branches of Lloyd's Banking Company; offices for the *Western Daily Express* in Baldwin-street; and business premises in Wine-street and the Pithay for Messrs. Harris & Sons, in Broad-street for Mr. E. Everard, in Avondale-road for Messrs. Chappell, Allen, & Co., in Temple-gate for Messrs. Todd & Co., in Rupert-street for Mr. C. Wills, in Victoria-street for Messrs. Bolt, with several other factories, warehouses, etc.

Mr. F. Ingle.

We regret to learn that Mr. Frederick Ingle, of the firm of Messrs. Dennett & Ingle, patentees of the Dennett fireproof construction, died on May 30. He was seventy-three years of age. In his early life, before joining Messrs. Robert Dennett & Co., Mr. Ingle was associated with the late Mr. T. C. Hine, F.S.A., of Nottingham.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not

SOME RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

June 1.—By HAMPTON & SONS.

Kingswood, Surrey.—Part of Margery Hall Estate, 193 acres, f.	£19,000

June 5.—By W. G. CARTER & Co.

Hackney.—13 to 24, Montague-rd., u.t. 60 yrs., g.r. 30*l.*, w.r. 219*l.* 4s.	500
Bethnal Green.—38, 40, 42, and 44, Middleton-st., u.t. 24 yrs., g.r. 16*l.*, w.r. 149*l.* 10s.	500
Mile End.—130 and 132, Devonshire-st., u.t. 24 yrs., g.r. 4*l.* 10s., w.r. 75*l.* 8s.	225
56, Mile End-rd. (s.), u.t. 17¾ yrs., g.r. 6*l.* 10s., y.r. 48*l.*	250
Forest Gate.—165 and 167, Odessa-rd., u.t. 64 yrs., g.r. 7*l.* 10s., w.r. 46*l.* 16s.	145

By HENRY J. WAY & SON.

Newport, I.W.—8 and 9, Pyle-st., f., w.r. 22*l.* 2s.	225
39 and 40, New-st., f., w.r. 26*l.*	280
Whitepit-la., Caversham, f., y.r. 30*l.*	300

June 6.—By CHESTERTON & SONS.

Kensington.—156, Church-st. (s.), f., y.r. 70*l.*	1,000
60 and 62, Bedford-gdns., u.t. 21 yrs., g.r. 25*l.*, y.r. 197*l.*	2,150

South Kensington.—47, Redcliffe-sq., u.t. 38 yrs., g r. 35*l.*, p. £355
52 and 54, Longridge-rd., u.t. 59½ yrs., g.r. 20*l.*, y. and e.r. 20*l.* 1,125
16, Nevern-rd., u.t. 59½ yrs., g.r. 10*l.*, e.r. 110*l.* 375

By FISHER, STANHOPE, & Co.

Stamford Hill.—65, Darenth-rd., u.t. 70 yrs., g.r. 6*l.* 10s., y.r. 44*l.* 380
Clapton.—85, Reighton-rd., u.t. 69 yrs., g.r. 8*l.*, y.r. 37*l.* 300
15, Reighton-rd., u.t. 66 yrs., g.r. 6*l.* 10s., y.r. 32*l.* 240

By MORTON & WATERS.

Bayswater—10, Pembridge-villas, u.t. 31 yrs., g.r. 12*l.* 12s., y.r. 85*l.* 330
Camberwell.—21, 23, and 25, Lettsom-st., u.t. 357 yrs., g.r. nil, w r. 67*l.* 12s. 375
Shepherd's Bush.—119, Coningham-rd., u.t. 52 yrs., g.r. 9*l.* 0s. 1d., y.r. 40*l.* 160

By GARRETT, WHITE, & POLAND.

Notting Hill.—59 and 73, Oxford-gdns., u.t. 63 yrs., g.r. 20*l.*, y.r. 70*l.* and p. 1,075
46, Tavistock-rd., f., y.r. 55*l.* 485

By SALTER, REX, & Co.

Kentish Town.—34, Dartmouth Park-rd., u.t. 50 yrs., g.r. 9*l.*, e.r. 55*l.* 350
198, Kentish Town-rd. (s.), u.t. 36 yrs., g.r. 12*l.*, y.r. 90*l.* 730
Holloway.—5 and 7, Corinne-rd., u.t. 56 yrs., g.r. 9*l.* 10s., y.r. 76*l.* 620

By STIMSON & SONS.

Camberwell.—54 and 56, Jardin-st., u.t. 10 yrs., g.r. 8*l.*, w.r. 72*l.* 16s. 100

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River.	£	s.	d.
Best Stocks	1	14	0
Picked Stocks for Facings	2	10	0

BRICKS, &c. (*Continued*).

Per 1000, Delivered at Railway Depôt.

	£	s.	d.		£	s.	d.
Flettons	1	13	0	Best Blue Pressed Staffordshire	3	15	0
Best Fareham Red	3	12	0	Do. Bullnose	4	0	0
Best Red Pressed Ruabon Facing	5	0	0	Best Stourbridge Fire Bricks	4	0	0
GLAZED BRICKS—							
Best White, Ivory, and Salt Glzd. Str'tch'rs	11	7	6	Double Headers	13	17	6
				One Side and two Ends	17	17	6
Headers	10	17	6	Two Sides and one End	18	17	6
Quoins, Bullnose, and 4½ in. Flats	14	17	6	Splays & Squints	16	7	6
D'ble Stretchers	16	17	6				

Second Quality £1 10s. per 1000 less than best.

	s.	d.	
Thames and Pit Sand	6	9	per yard, delivered.
Thames Ballast	5	6	" "
Best Portland Cement	31	0	per ton, "
Best Ground Blue Lias Lime	19	0	" "

NOTE—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 13s. 0d. per yard delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly dpt.

STONE.

Per Ft. Cube.

	s.	d.
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	3
White Basebed, delivered on road waggons Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	4½

Per Ft. Cube, delivered at Railway Depôt.

	s.	d.		s.	d.
Ancaster in blocks	1	10	Closeburn Red Freestone	2	0
Beer in blocks	1	6	Red Mansfield Freestone	2	4
Greenshill in blocks	1	10	Talacre & Gwespyr Stone	2	4
Darley Dale in blocks	2	4			
Red Corsehill in blocks	2	3			

YORK STONE—*Robin Hood Quality.*

Per Ft. Cube, Delivered at Railway Depôt.	s.	d.
Scappled random blocks	2	10
Per Ft. Super., Delivered at Railway Depôt.		
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3
6 in. rubbed two sides ditto, ditto	2	6
3 in. sawn two sides slabs (random sizes)	0	11½
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7
1½ in. to 2 in. ditto, ditto	0	6

STONE (*Continued*).

HARD YORK— Per Ft. Cube, Delivered at Railway Depôt.	s.	d.
Scappled random blocks	3	0
Per Ft. Super., Delivered at Railway Depôt.		
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2	8
6 in. rubbed two sides ditto	3	0
3 in. sawn two sides slabs (random sizes)	1	2
2 in. self-faced random flags	0	5

SLATES.

Per 1000 of 1200 at Railway Depôt.

In. In.	£	s.	d.	In. In.	£	s.	d.
20×10 best blue Bangor	13	2	6	20×10 best Eur'ka unfading green	15	17	6
20×12 ditto	13	17	6	20×12 ditto	18	7	6
20×10 1st quality ditto	13	0	0	18×10 ditto	13	5	0
20×12 ditto	13	15	0	16×8 ditto	10	5	0
16×8 ditto	7	5	0	20×10 permanent green	11	12	6
22×10 best blue Portmadoc	12	12	6	18×10 ditto	9	12	6
16×8 ditto	6	12	6	16×8 ditto	6	12	6

TILES.

At Railway Depôt.

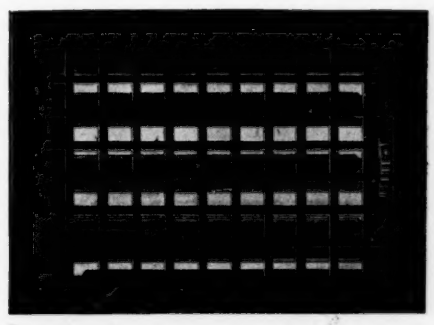
	s.	d.		s.	d.
Best plain red roofing (per 1000)	42	0	Best "Hartshill" brand, plain sand-faced (per 1000)	45	0
Hip and Valley (per doz.)	3	7	Do. pressed (per 1000)	42	6
Best Broseley (per 1000)	50	0	Do. Ornamental (per 1000)	47	6
Do. Ornamental (per 1000)	52	6	Hip (per doz.)	4	0
Hip and Valley (per doz.)	4	0	Valley (per doz.)	3	6
Best Ruabon red, brown, or brindled (Edw'ds) (per 1000)	57	6	Staffords. (Hanley) Reds or Brindled (per 1000)	42	6
Do. Ornamental (per 1000)	60	0	Hand-made sand-faced (per 1000)	45	0
Hip (per doz.)	4	0	Hip (per doz.)	4	0
Valley (per doz.)	3	0	Valley (per doz.)	3	6

WOOD.

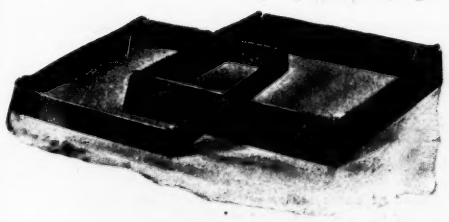
BUILDING WOOD.	At per standard. £	s.	d.		£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	14	0	0	...	15	10	0
Deals: best 3 by 9	13	10	0	...	14	10	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	10	0	...	12	10	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.			
Deals: seconds	1	0	0	less thn best.			
Battens: seconds	0	10	0	" "			
2 in. by in. and 2 in. by 6 in.	9	10	0	...	10	10	0
2 in. by 4½ in. and 2 in. by 5 in.	9	0	0	...	10	0	0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.			
¼ in.	1	0	0	"			

"Ideal" Registers & Ventilators.

"Ideal" Registers combine superior design and finish with strength and durability—they are made of cast-iron, therefore do not rust and can be fixed in any situation—are available in a great variety of sizes—can be promptly supplied in any colour or finish.



"Ideal" Plain Lattice Design Register.



Cast-iron Wall Frames are specially designed to hold Registers securely in position, are inexpensive, and can be masoned solidly into brickwork.

A large stock of nearly all sizes of Plain Lattice Black Japanned Registers is regularly carried at our Hull works.

Full particulars, illustrations, and prices on request.

We make "Ideal" Radiators and "Ideal" Boilers, and supply all Accessories required in connection with Low Pressure Hot Water and Steam Heating.

NATIONAL RADIATOR COMPANY LIMITED. 439 & 441, Oxford Street, London, W.

WORKS: HULL, Yorks. Agents carrying Stocks {BAXENDALE & CO., Ltd., Miller Street Works, MANCHESTER. {WILLIAM MACLEOD & CO., 60, 62, & 64, Robertson Street, GLASGOW.

WOOD (*Continued*).

BUILDING WOOD (*Continued*)—	At per load of 50 ft.						
	£	s.	d.		£	s.	d.
Fir timber: best middling Danzig or Memel (average specification)	5	0	0	...	5	10	0
Seconds	4	10	0	...	5	0	0
Small timber (8 in. to 10 in.)	3	17	6	...	4	0	0
Small timber (6 in. to 8 in.)	3	5	0	...	3	10	0
Swedish balks	2	12	6	...	3	0	0
Pitch-pine timber (30 ft. average)	5	5	0	...	6	0	0

JOINERS' WOOD.	At per standard.						
	£	s.	d.		£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	24	10	0	...	25	10	0
3 in. by 9 in.	22	10	0	...	23	10	0
Battens, 2½ in. and 3 in. by 7 in.	17	0	0	...	18	0	0
Second yellow deals, 3in. by 11in.	19	0	0	...	20	0	0
" " 3 in. by 9 in.	18	0	0	...	19	10	0
Battens, 2½ in. and 3in. by 7 in.	14	0	0	...	15	0	0
Third yellow deals, 3 in. by 11 in. and 9 in.	14	0	0	...	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	10	0	...	12	10	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	10	0	...	22	10	0
Do. 3 in. by 9 in.	18	10	0	...	19	10	0
Battens	14	0	0	...	15	0	0
Second yellow deals, 3 in. by 11 in	16	10	0	...	17	10	0
Do. 3 in. by 9 in.	15	0	0	...	16	0	0
Battens	11	10	0	...	12	10	0
Third yellow deals, 3in. by 11 in.	13	10	0	...	14	10	0
Do. 3 in. by 9 in.	13	0	0	...	14	0	0
Battens	10	10	0	...	11	0	0
White Sea and Petersburg—							
First white deals, 3 in. by 11 in.	15	0	0	...	16	0	0
" " 3 in. by 9 in.	14	0	0	...	14	10	0
Battens	11	10	0	...	12	10	0
Second white deals, 3in. by 11in.	14	0	0	...	15	0	0
" " 3 in. by 9 in.	13	0	0	...	14	0	0
Battens	10	10	0	...	11	0	0
Pitch-pine: deals	19	0	0	...	21	0	0
Under 2 in. thick extra	0	10	0	...	1	0	0
Yellow Pine—First, regular sizes	48	0	0	upwards.			
Oddments	32	0	0	"			
Seconds, regular sizes	33	0	0	"			
Oddments	28	0	0	"			
Kauri Pine—Planks per ft. cube.	0	4	6	...	0	6	0
Danzig and Stettin Oak Logs— Large, per ft. cube	0	3	0	...	0	3	9
Small " "	0	2	6	...	0	2	6
Wainscot Oak Logs, per ft. cube	0	6	6	...	0	8	0
Dry Wainscot Oak, per ft. sup. as inch	0	0	10	...	0	1	0
¼ in. do. do.	0	0	8½	...		—	
Dry Mahogany—Houndras, Tabasco, per ft. super. as inch..	0	0	10	...	0	1	1
Selected, Figury, per ft. super. as inch	0	1	6	...	0	2	6
Dry Walnut, American, per ft. super. as inch	0	0	10	...	0	1	0
Teak, per load	18	0	0	...	22	0	0
American Whitewood planks, per ft. cube	0	5	0	...	0	6	0

WOOD (*Continued*).

JOINERS' WOOD (*Continued*)—	Per square.						
Prepared Flooring, etc.—	£	s.	d.		£	s.	d.
1 in. by 7 in. yellow, planed and shot	0	13	6	...	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0	...	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0	...	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	...	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	...	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0	...	0	16	6
⅝ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0	11	0	...	0	13	6
1 in. by 7 in. " "	0	14	0	...	0	18	6
⅝ in. by 7 in. white " "	0	10	0	...	0	11	0
1 in. by 7 in. " "	0	12	9	...	0	15	0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton.						
	£	s.	d.		£	s.	d.
Rolled Steel Joists, ordinary sections	7	10	0	...	8	0	0
Compound Girders, ordinary sections	9	10	0	...	10	0	0
Steel Compound Stanchions	11	0	0	...	12	0	0
Angles, Tees, and Channels, ordinary sections	9	10	0	...	10	0	0
Flitch Plates	9	10	0	...	9	10	0
Cast Iron Columns & Stanchions, including ordinary patterns	7	10	0	...	8	10	0

METALS.

IRON—	Per ton, in London.						
	£	s.	d.		£	s.	d.
Common Bars	9	0	0	...	9	10	0
Staffordshire Crown Bars, good merchant quality	9	5	0	...	9	15	0
Staffordshire "Marked Bars"	11	0	0	...	—		
Mild Steel Bars	9	5	0	...	9	15	0
Hoop Iron, basis price	10	0	0	...	—		
" " Galvanised	17	10	0	...	—		

(*And upwards, according to size and gauge.)

Sheet Iron Black—							
Ordinary sizes to 20 g.	10	5	0	...	—		
" " 24 g.	11	5	0	...	—		
" " 26 g.	12	15	0	...	—		
Sheet Iron, Galvanised, flat, ordinary quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	10	0	...	—		
Ordinary sizes to 22 g. and 24 g.	16	0	0	...	—		
" " 26 g.	17	0	0	...	—		
Sheet Iron, Galvanised, flat, best quality— Ordinary sizes to 20 g.	18	10	0	...	—		
" " 22 g. and 24 g.	19	0	0	...	—		
" " 26 g.	20	10	0	...	—		
Galvanised Corrugated Sheets— Ordinary sizes, 6ft. to 8ft. 20 g.	15	0	0	...	—		
" " 22 g. and 24 g.	15	5	0	...	—		
" " 26 g.	16	15	0	...	—		

METALS (*Continued*).

IRON (*Continued*)—	Per ton, in London.						
	£	s.	d.		£	s.	d.
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	10	0	...	—		
Best Soft Steel Sheets, 2 g. & 24 g.	13	10	0	...	—		
" " " 26 g.	15	10	0	...	—		
Cut Nails, 3 in. to 6 in.	11	0	0	...	11	10	0

(Under 3 in., usual trade extras.)

LEAD, &c.

	£	s.	d.				
LEAD—Sheet, English, 4lb. and up	21	15	0	...	—		
Pipe in coils	22	5	0	...	—		
Soil pipe	25	5	0	...	—		
Compo pipe	25	5	0	...	—		
ZINC—Sheet—	In casks of 10 cwt.						
Vielle Montagne	33	10	0	...	—		
Silesian	33	5	0	...	—		

Zinc, in bundles, 1s. per cwt. extra.

COPPER—							
Strong Sheet per lb.	0	1	0	...	—		
Thin " "	0	1	1	...	—		
Copper nails "	0	0	10	...	—		
Copper wire "	0	0	10	...	—		
BRASS—							
Strong Sheet "	0	0	11	...	—		
Thin "	0	1	0	...	—		
TIN—English Ingots "	0	2	0	...	—		
SOLDER—Plumbers' "	0	0	9½	...	—		
Tinmen's "	0	1	0½	...	—		
Blowpipe "	0	1	2½	...	—		

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*

Per Ft., Delivered.			
15 oz. thirds	2½d.	26 oz. fourths	3¾d.
" fourths	1⅔d.	32 oz. thirds	5d.
21 oz. thirds	3½d.	" fourths	4½d.
" fourths	2⅔d.	Fluted Sheet, 15 oz.	3¾d.
26 oz. thirds	4d.	" 21 oz.	4½d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*

Per Ft., Delivered.			
⅛ Rolled plate	2½d.	Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white	3¾d.
1/16 Rough rolled and rough cast plate..	2½d.		
¼ Rough rolled and rough cast plate..	3d.	Ditto, tinted	5d.

* Not less than two crates.

OILS, &c.

		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	3	10
" " " in barrels	"	0	3	11
" " " in drums	"	0	4	1
Boiled " in barrels	"	0	4	1
" " " in drums	"	0	4	4
Turpentine in barrels	"	0	2	11
" in drums	"	0	3	1
Genuine Ground English White Lead,	per ton	29	0	0
Red Lead, Dry	"	25	0	0
Best Linseed Oil Putty	per cwt.	0	10	6
Stockholm Tar	per barrel	1	12	0

IS OPENED PROVISIONALLY.

POINTS OF MERIT:

Favourable Situation.

Immingham Dock is geographically the most central coal port for the Continent, and is in direct rail communication with the great coalfields of the West Riding and South Yorkshire, Derbyshire, Nottinghamshire, &c.

Always Accessible.

Immingham Dock has a storm-protected harbour and deep water channel and entrance lock, enabling the largest ships to enter and leave at any state of the tide.

Most Modern Equipment.

Immingham Dock has eight coal hoists capable of shipping 5,600 tons per hour.
Largest ships can bunker at deep water jetty—only ten miles from the open sea—at any time of the day or night.
Storage accommodation is provided for 11,600 loaded wagons, and there are 170 miles of sidings.
Every precaution taken to minimise breakage of coal.
Movable hoist enables two "holds" of a vessel to be loaded simultaneously.

Low Dock Charges.

Immingham Dock charges are more favourable than at any competitive port.

For Information apply Great Central Goods Agents or Port Master, Immingham Dock, Grimsby. Illustrated Brochure "3" and Map "3," printed in English, French or German, post free from G.C.R. Publicity Office, 216, Marylebone Road, London, N.W.

SAM FAY, General Manager.

VARNISHES, &c.	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 6 *p.m. on Wednesday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.* unless in some exceptional cases and for special reasons.]

*Denotes *accepted.* †Denotes *provisionally accepted.*

ALDERSHOT. — For erection of three houses, Holly-road. Messrs. Friend & Lloyd, architects, Aldershot:—

T. B. Seward	£924	E. C. Hughes	£830
Martin, Wells, & Co., Ltd.	850	H. Jones	795
		W. Sanderson	765

BASINGSTOKE.—For erection of cemetery chapel, lodge, etc., for Corporation of Basingstoke. Mr. F. R. Phipps, A.M.Inst.C.E., Surveyor, Basingstoke:—

C. Grace & Sons	£2,160 0 0	E. C. Hughes	£2,023 0 0
M. E. Fitt	2,085 0 0	J. E. Franklin & Co.	1,982 0 0
A. G. Butler	2,071 16 4	Jones & Son	1,931 13 4
H. J. Goodall & Son	2,056 0 0	J. Harris	1,926 6 0
Martin, Wells, & Co.	2,055 7 0	Smallbone & Sons*	1,895 0 0

BELPER.—For erection of an electric palace of varieties, King-street. Mr. E. B. Dean, M.S.A., architect, Mansfield. Quantities by the architect:—

L. Brown	£2,100 0 0	Harris & Hunt	£1,960 10 10
J. W. Haynes	2,000 0 0	W. Corah & Son, Loughborough*	1,879 0 0
J. & F. L. Parsons	1,969 0 0		

BLYTH (Northumberland).—For new streets and sewerage works, Princess Louise-road and Wharton-street, etc. Mr. R. Grieves, surveyor:—

Brims & Co.	£8,992 0 0	R. Baxter	£6,560 0 0
J. W. Henderson	8,351 3 7	J. Robson	6,499 0 1
R. Hudson & Sons	8,200 0 0	Walton & Moscrop	6,280 4 7
J. McLaren, jun.	7,335 11 3	G. E. Simpson, Newcastle-on-Tyne*	5,858 11 0
G. Armstrong	7,252 4 9	A. Stark & Sons, Ltd.	5,843 19 0
J. Lant	6,901 0 3		

BOSTON.—For erection of a house, stables, and cowshed in Brothertoft-road. Mr. F. Parker, F.S.A., architect, 7, Pump-square, Boston. Quantities by Mr. F. Parker, Q.S.A., Boston:—

Pinder & Son	£830 0	J. Leape & Sons	£773 0
Belton & Co.	799 10	W. E. Dawson, Boston*	742 10
J. W. Darby	780 0		
Pett & Bonfield	780 0		

CARLISLE.—For additions and alterations at the St. Cuthbert's Roman Catholic schools, Union-street. Mr. H. Foxall, architect, 54, Lowther-street, Carlisle:—

Builders: J. & R. Bell, Nelson-street, Carlisle*	£595 17 8
Joiners: Dowell & Son, Coltur-lane, Carlisle*	280 0 0
Plumbers: Graham & Crawford, Blackfriars-street, Carlisle*	152 10 0
Slater: G. Irving, Linden-road, Carlisle*	19 10 0
Plasterers: Armerod & Son, Close-street, Carlisle*	69 19 9
Painters, etc.: Nill & Stephenson, Castle-street, Carlisle*	52 6 4
Heating: J. Corbett, Corporation-road, Carlisle*	96 0 0

LONDON.—For supply of 7,000 cubic yds. of sand in connexion with the filter-beds at Lee Bridge and Ferry-lane stations, for the Metropolitan Water Board:—

	Lee Bridge. Alongside in Barge.	Lee Bridge. In Truck in Siding.	Ferry-lane. Alongside in Barge.	Ferry-lane. In Truck in Siding.
	s. d.	s. d.	s. d.	s. d.
J. Arnold. Sample 1	‡ ...	11 0 ...	‡ ...	11 6
J. Arnold. Sample 2	‡ ...	10 3 ...	‡ ...	10 9
Ham River Grit Co.	10 6 ...	11 0* ...	10 6 ...	11 0*
E. Cole	11 2 ...	10 9 ...	11 2 ...	11 3
North London Ballast Co.	— ...	12 0 ...	— ...	14 6

‡ Could not guarantee quantity in stated time.

LONDON.—For painting and repairs to Nos. 2, 3, 4, 5, and 6, Treveca-terrace, New Southgate, for the Metropolitan Water Board:—

W. Oley	£83 6 9	Clemens Bros.	£58 10 0
Webb & Son	72 18 0	J. R. Jackson	57 10 0

LONDON.—For repairs to the reservoir keeper's cottage at Crouch Hill reservoir, for the Metropolitan Water Board:—

Wood & Son	£46 14 0	W. Oley*	£31 14 9
Clemens Bros.	46 10 0		

LONDON.—For the erection of a pumping-station, gas-producer house, and two cottages, required at the Chingford reservoir works, including the construction of the proposed new roadway from the boundary of the Board's land at Enfield Lock to the proposed pumping-station at the northern end of the Chingford reservoir works, the roads and paths around the pump and producer-houses, together with a suitable gateway at the entrance to the new roadway, the road to be constructed of tar macadam with granite kerbing, for the Metropolitan Water Board:—

—	With Natural Portland Stone Dressings.	With Reconstructed Portland Stone Dressings.	Artificial Portland Stone Dressings.	With Local Facing Bricks instead of Leicestershire.
	£ s.	£	£	£
Kirk & Randall, Ltd.	15,274 0	15,122	14,546	14,506
C. Wall, Ltd.*	14,817 18	14,666	14,054	14,023

LONDON.—For the erection of an engine-house, cottage, formation of roads, drainage, and other contingent works at Green-street-green, for the Metropolitan Water Board:—

A. Porter	£2,734 16 6
Kirk & Randall, Ltd.	2,392 0 0
J. W. Ellingham	2,186 0 0
W. F. Blay, Ltd.	2,181 16 9

LONDON.—For the renewal of the electrical installation at Blackwall Tunnel, for the London County Council:—

D. Watson & Co.	£4,464 0 0
Drake & Gorham, Ltd.	4,304 11 0½
Pinching & Walton	3,604 8 8
Tilley Bros.	3,536 12 2¾
G. E. Taylor & Co.*	3,485 4 2

LONDON.—For laying stoneware ducts, repairing, etc., in connexion with tramways, for the London County Council:—

J. Mowlem & Co., Ltd.	£2,269 0 0
Reid Bros., Engineers, Ltd.	2,077 19 2
Airds, Ltd.	1,939 1 4
J. A. Ewart*	1,818 18 2

LONDON.—For supply of overhead poles required in the extension of tramways in East India Dock-road, for the London County Council:—

British Mannesmann Tube Co., Ltd.‡	£137 5 1
British Mannesmann Tube Co., Ltd.‡	140 15 6
Dick, Kerr, & Co., Ltd.	168 2 0
J. Spencer, Ltd.	162 15 0
V. Watlington & Co., Ltd.	161 18 0
Clough, Smith, & Co., Ltd., South-place, E.C.*	157 0 11

‡ Incomplete Tender.

LONDON.—For repainting superintendent's house, filth hoist and railings, at North Woolwich pumping-station, for the London County Council:—

J. H. Hodgin	£120 10	W. Harris, North Woolwich*	£116 0
Thomas & Edge	118 0		

LONDON.—For providing a parlour and store-room at the Anerley Residential School for the Deaf, for the London County Council:—

L. Kazak	£510 0	W. J. Mitchell & Son	£415 0
W. Johnson & Co., Ltd.	479 0	J. Grover & Son	412 0
W. Akers & Co., Ltd.	456 0	J. & C. Bowyer, Ltd.	395 0
F. & G. Foster	447 0	F. W. Fletcher	391 0
J. Garrett & Son	425 0	H. Leney & Son	377 15

[The Architect's estimate comparable with the tenders is £389.]

LONDON.—For the formation of a hall for the girls department of the Mina-road School, Walworth, for the London County Council:—

J. Appleby & Sons	£1,152 0	Rice & Son	£895 0
W. V. Goad	1,022 5	J. & C. Bowyer, Ltd.	865 0
E. A. Roome & Co.	950 0	Triggs & Co.	859 12
J. Garrett & Son	908 0	J. Marsland & Sons	850 0
Woodward & Co.	904 0		
T. D. Leng	896 0		

[The Architect's estimate comparable with the tenders is £775.]

LONDON.—For supply of enamelled-iron advertisement plates, for the London County Council:—

—	Price a Foot Super. and Number of Colours. 2	3	4	5
	s. d.	s. d.	s. d.	s. d.
Imperial Enamel Co., Ltd.	1 0	1 1	1 2	1 3
F. Francis & Sons, Ltd.	9½	10	10½	11
J. A. Jordan & Sons, Ltd.	9	9½	10½	11
Falkirk Iron Co., Ltd.	8½	9½	10½	11½
Chromographic Enamel Co., Ltd.	8½	9½	10½	11½
Wildman & Meguyer, Ltd.*	8	9½	10½	11½

LONDON.—For the conversion of the Elliott School, Wandsworth, into a central school, for the London County Council:—

	Alterations to Buildings.	Fittings.
R. S. Ronald	£208 10 0	£480 0 0
Triggs & Co.	237 12 0	409 0 0
J. Garrett & Son	200 0 0	437 0 0
Pasterfield & English	196 0 0	437 17 0
F. & G. Foster	195 0 0	389 0 0
Lole & Co.	191 14 11	389 8 4

LONDON.—For supply of Guernsey granite paving setts, for the London County Council:—

—	Price a Ton Delivered at							
	County Wharf (1,000 tons).		Deptford Wharf (300 tons).		Metropolis Wharf (1,000 tons).		Leven-road, Poplar, Depôt (1,000 tons).	
	s.	d.	s.	d.	s.	d.	s.	d.
A. & F. Manuelle	27	9*	28	6	29	3	27	9*
W. Griffiths & Co., Ltd.	28	3	28	9	28	7*	28	7
Fry Bros.	28	5	27	9*	29	0	28	9
Brookes, Ltd.	28	3	28	7	29	7	28	5
United Stone Firms, Ltd.‡	28	7	28	9	23	10	29	6
Enderby and Stoney Stanton Granite Company, Ltd.	30	3	31	3	30	0	30	0
H. Woodham & Sons	34	0	34	0	34	0	34	0

‡ Not to specification.

LONDON.—For supply of sand-blasted advertisement glasses, for the London County Council:—

—	Prices, each.			Discount per Cent.
	2,500. 26½ in. by 6 in. by 21 oz.	500 23¼ in. by 5⅛ in. by 21 oz.	800. 18 in. by 6 in. by 21 oz.	
	A. s. d.	B. s. d.	C. s. d.	
Caspar & Co.	1 0*	11*	10	—
Pugh Bros.	1 3	1 3	9½*	—
London Sand Blast and Decorative Glass Works, Ltd.	1 9	1 8	1 3	—
Pilkington Bros., Ltd.—				
Ruby 20/50 lots	2 3½	2 3	2 1½	2½
,, 50/100 ,,	2 1½	2 1	1 11½	
Blue 20/50 ,,	2 8	2 7	2 4½	
,, 50/100 ,,	2 6	2 5	2 2½	

LONDON.—For quadrennial survey and overhaul of s.s. *Belvedere*, for the London County Council:—

Glengall Ironworks, Ltd.	£2,179 5 0
Mills & Knight	2,088 15 0
Thames Ironworks Shipbuilding & Engineering Co.	2,087 11 0
Fletcher, Son, & Fearnall, Ltd., Limehouse, E.*	1,846 0 0

PEASLAKE (Surrey).—For schools. Mr. E. H. Lingen Barker, architect, 10, Pembridge-mansions, W. Quantities by Mr. G. Silvester, 7, Adam-street, Adelphi, W.C.:—

Mitchell	£2,547	Tickner	£1,450
Gibson	1,605	Fryer & Sons	1,449
Cassè	1,557	Everitt & Sons	1,400
Harrison	1,536	Goddard & Sons	1,400
Holt	1,500	Drowley & Sons	1,385
Martin & Co.	1,497	Cook & Sons	1,359
Woods	1,487	Highlett & Co.	1,355
Staines & Son	1,477	Ellis, Guildford‡	1,322
Milton & Sons	1,475	Puttock	1,317
Jerram	1,470	Smith	1,284
Forster & Sons	1,467	Thorpe	1,289

‡ Accepted after the modifications.

RIDDLESDEN.—For erection of a detached house. Mr. Hartley Hogarth, architect, Keighley:—

Mason: E. Turner, Bradford-street, Keighley*	£240 0 0
Joiner: J. Bailey, Laycock*	90 0 0
Plumber: W. Wallace, Queen-street, Keighley*	61 0 0
Plasterer: A. Emmott, North-street, Keighley*	49 0 0
Tiler: W. H. & E. Walton, Lawkholme-lane, Keighley*	39 18 0
Painter: W. Maxwell, Dalton-lane*	8 0 0

RYTON.—For erection of Wesleyan Church Hall and classrooms, Crookhill. Mr. G. Bell, architect, Newcastle-on-Tyne:—

G. Browell	£1,168 10 0	W. H. Ayton	£1,117 0 0
E. R. Davidson	1,161 12 3	J. Fairmington	1,108 18 9
S. F. Davidson & Miller	1,158 0 0	I. Bewley	1,087 0 0
J. Walker	1,154 1 0	T. Charlton, Newburn‡	1,027 8 7

‡ Recommended for acceptance.

SHERE (Surrey).—For additions to schools. W. E. H. Lingen Barker, architect, 10, Pembridge-mansions, W. Quantities by Mr. W. G. Silvester, 7, Adam-street, Adelphi, W.C.:—

Gibson	£1,280	Milton & Sons	£990
Cassè	1,129	Highlett & Co.	990
Thorpe	1,125	Harrison	980
Mitchell	1,072	Woods	970
Martin & Co.	1,041	Goddard & Son	970
Staines	1,033	Forster & Sons	952
Fryer & Sons	1,024	Ellis	938
Cook & Sons	1,015	Smith	930
Drowley & Sons	1,005	Puttock	927
Everitt & Sons	999	Jerram, East Ham*	897
Holt	990		

SOUTHEND.—For alterations and additions to the London-road School. Messrs. Cabuche & Hayward, architects, Southend:—

		Extra Terrazzo Dado.
S. E. Moss	£3,991 18 0	£272 8
C. W. Pavey	3,799 0 0	250 0
W. H. Sharpin	3,755 0 0	249 0
H. E. Campkin	3,522 0 0	264 0
J. C. Flaxman	3,543 0 0	260 0
E. Leaney	3,539 12 6	240 0
F. E. Woodhams	3,450 0 0	248 0
A. R. Whur	3,432 10 0	245 0
A. E. Symes	3,407 0 0	230 0
Davey & Armitage	3,330 0 0	239 0
F. Davey	3,091 0 0	—
E. & B. H. Davey, Southend‡	3,075 0 0	243 0
R. N. Marrable	2,994 0 0	222 0

‡ Recommended for acceptance.

STEWARTON. — For sewerage works. Messrs. Elliott & Brown, Civil Engineers, Burton-buildings, Parliament-street, Nottingham:—

R. C. Brebner & Co.	£5,877 0 0	W. Chambers & Sons	£4,736 1 8
Boyd & Forrest	5,801 8 10	Crawford Bros.	4,714 2 0
D. Gibson	5,700 10 5	I. Craig, 134, St. Vincent-street, Glasgow*	4,702 17 1
J. Urquhart	5,569 19 5	G. Chalmers	4,623 10 4
Shanks & McEwan	4,895 16 4		
H. M. Murray & Co.	4,838 15 1		

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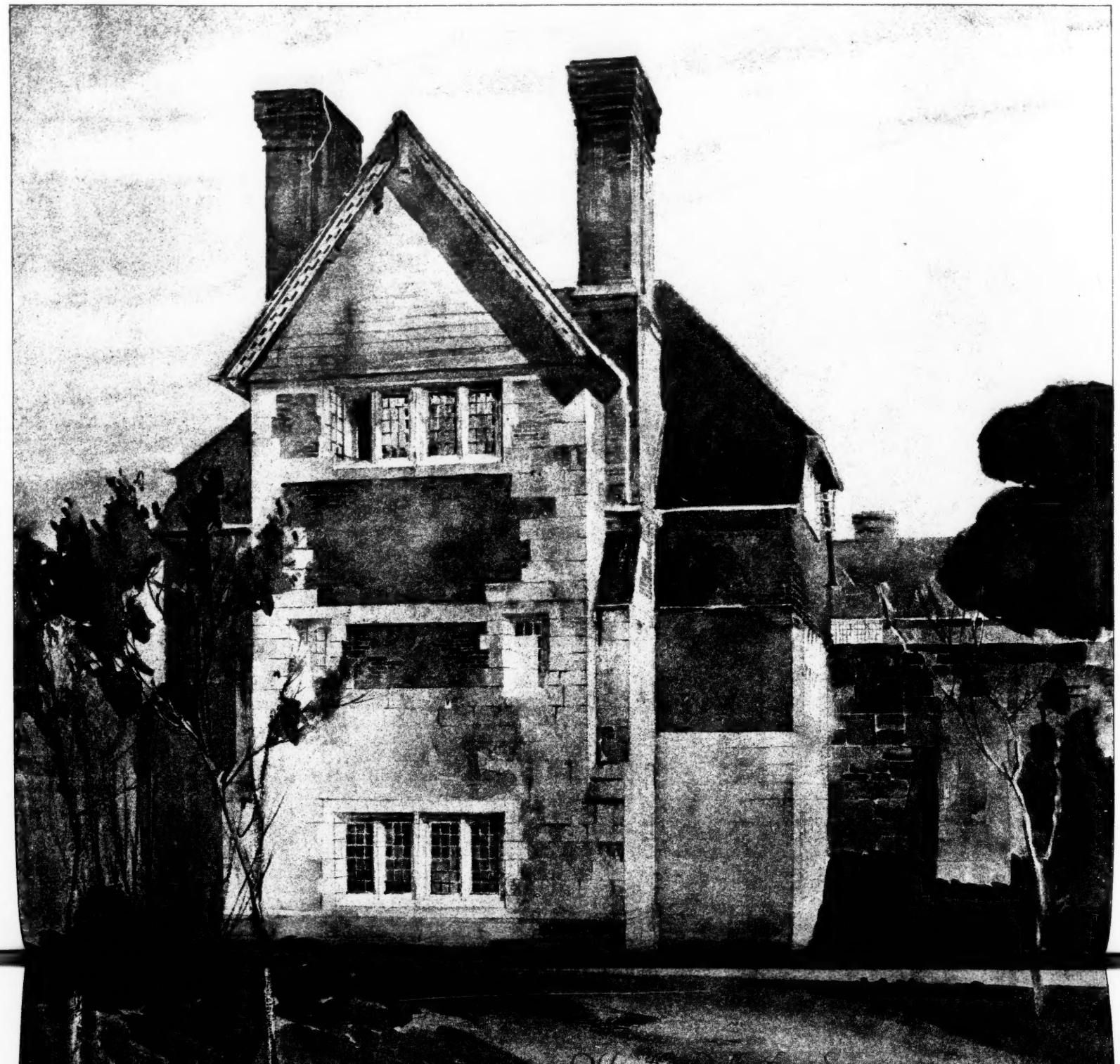

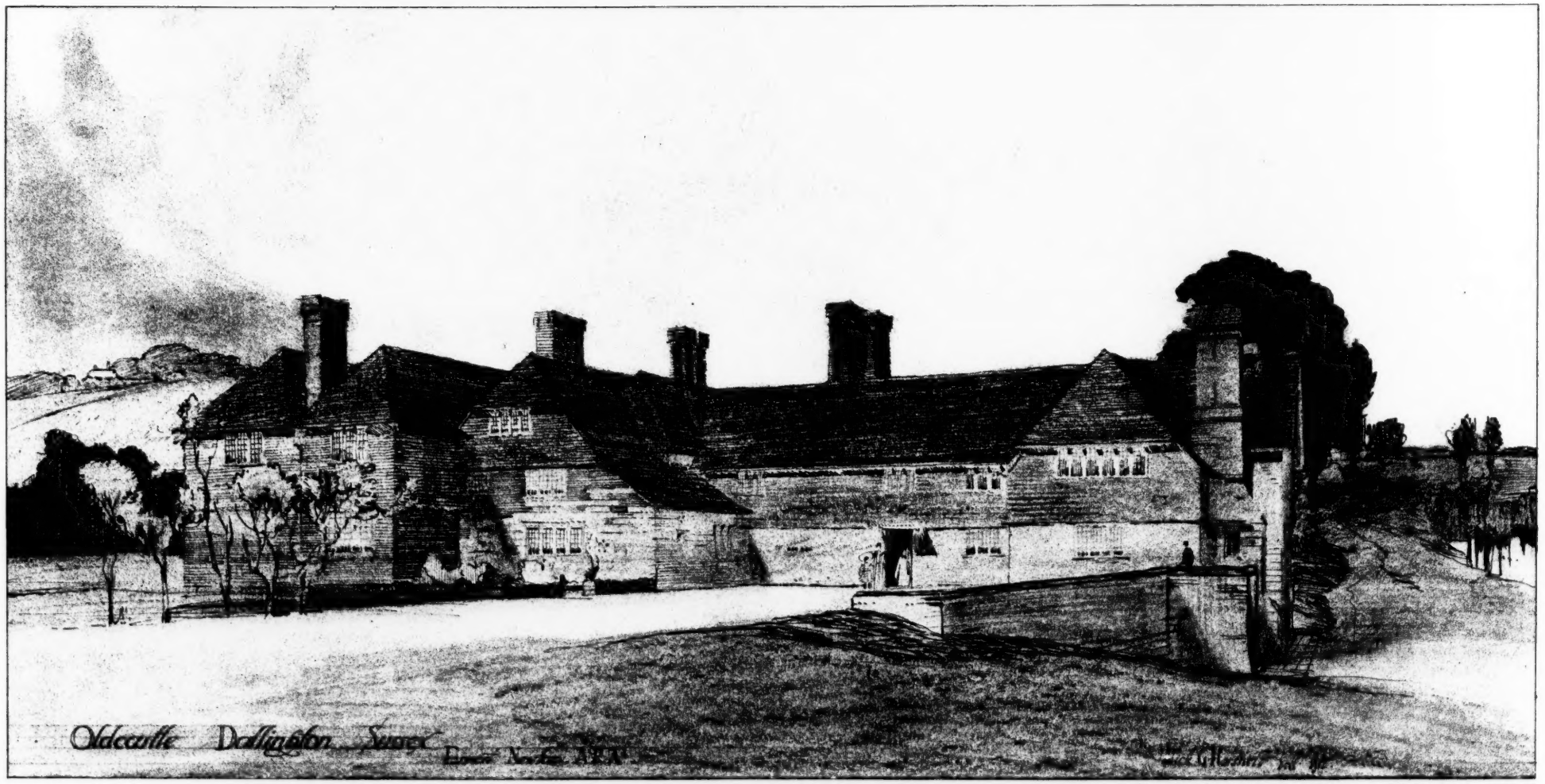

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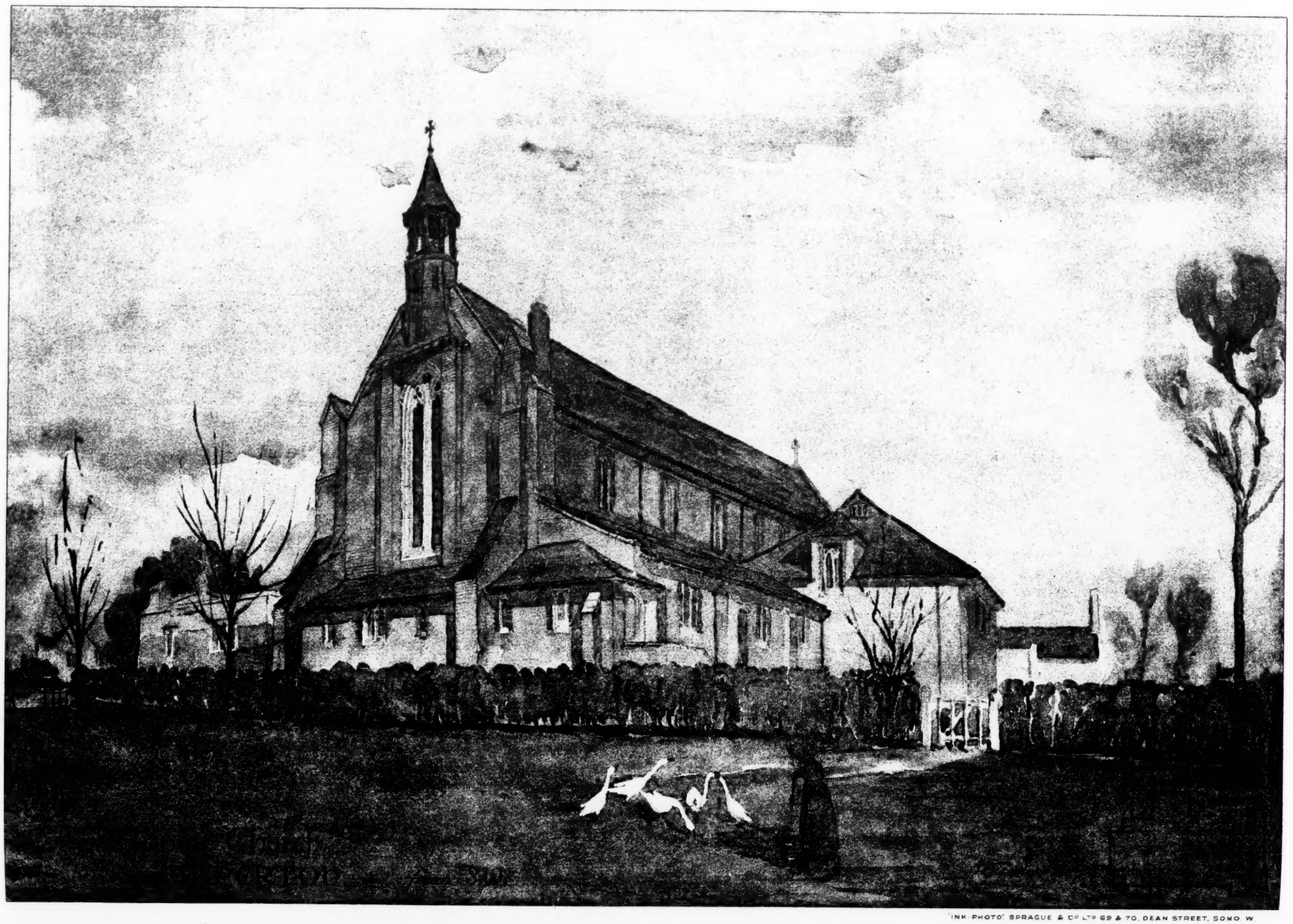

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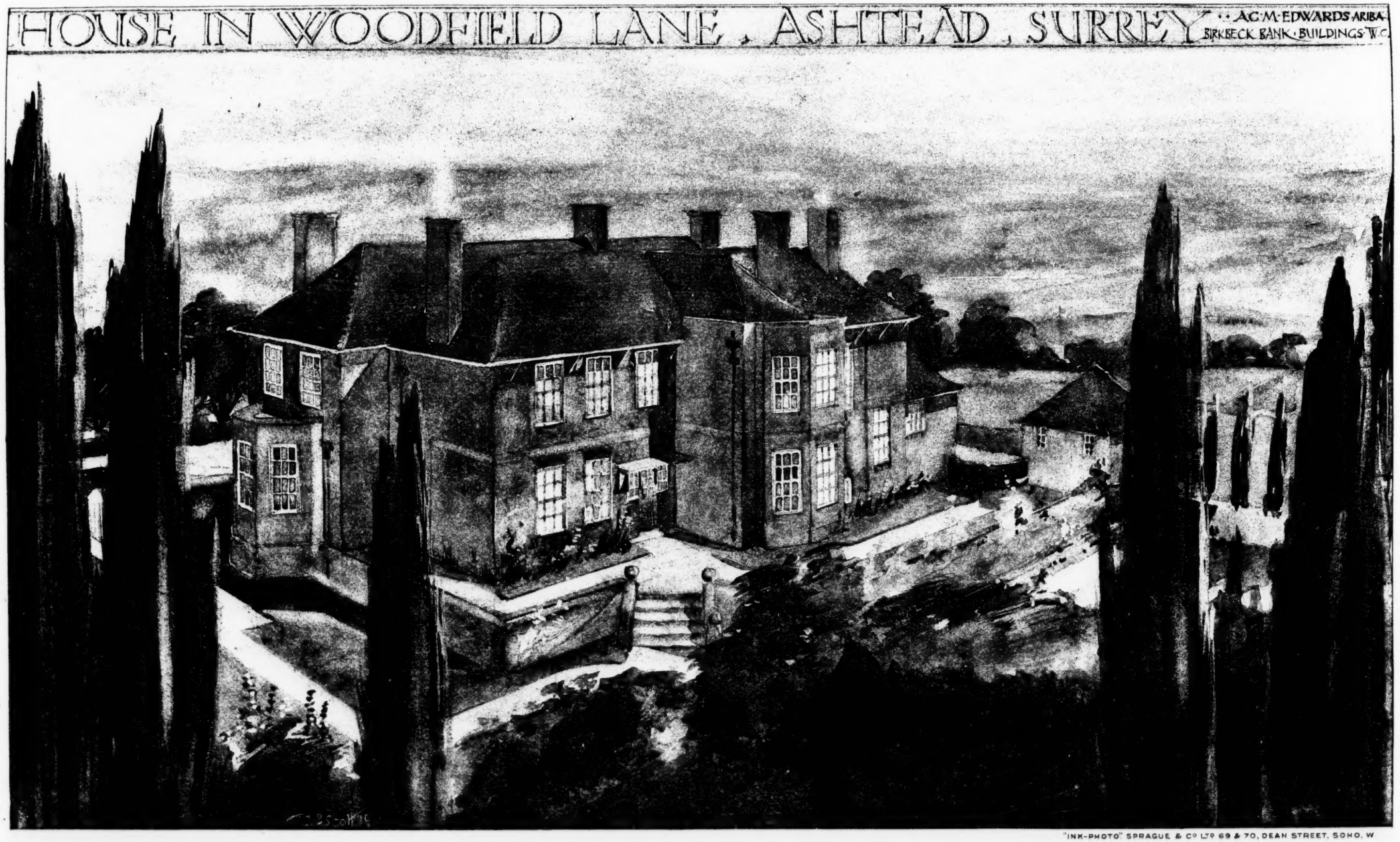

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